

# How to iudge of weather by

*the Sunne rising or going  
downe.*

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**I**f the Sunne in the Horizon or rising, cleare and bright, sheweth a pleasant day : but thinly overcast with a cloude, betokeneth foule weather. Also at the going downe, the body diversly coloured or red, and about dispersed with like cloudes, the beames red, and of length, pronounce great winds, the next day from that part. Blackenesse in the Sunne or Moone, betokeneth water : Red, signifyeth wind.

*De observan-  
dis meteoris.*

The Element redde in the evening, the next day faire : but in the morning red, winde and raine. Also the Sunne beames spotted greene, pale, or blacke, gathered to a cloude, signifyeth raine. Further, the Sun at the setting plainly seene without any cloude, declareth a faire night to ensue.

Here note, Ptolome willetth vs diligently to observe the circle, or circles about the Sunne. If it be cleare, and the circle of no continuance, behold faire weather : If many of them, wind.

Winds more vehement are signified, if that the circles be somewhat redde, here and there broken : but these obscured, thicke, and blacke, looke for colde, wind, and snow.

What is spoken of the Sun, touching the circles, the same is ment of the Moone.

Note here that greater winds chaunce in the day, then in the Night.

How weather is declared by the colour of the Moone,  
and by the nature of the signe wherein sheis.

**I**f the Moone in the third of her chaunge, yea, three dayes before the full, for in the midnes of the quarter be found of pure light, nothing compassing her, the ende direct vp, shee promisseth faire weather, but bent to red colour, promoketh winde. The Moone pale or somewhat inclined to blacke, obscure or thicke, threatneth raine.

*Luna rubes re-  
tat, pallor pluit,  
Alba serenat.*

Also by the nature of the signe, weather may bee iudged, thus according to Stefferinus, Monte regius, Leupoldus, and famous





Prognostication euerlasting of right good  
 effect, fruitfully augmented by the auctor, containing plaine, brief,  
 pleasaunt, chosen rules to iudge the weather by the Sunne, Moone,  
 Starres, Cometes, Rainebow, Thunder, Cloudes, with other extraordinary  
 tokens, not omitting the Aspesies of Planetes, with a briefe iudgement for euer,  
 of Plenty, Lacke, Sicknes, Dearth, Warres &c. opening also many  
 naturall causes worthy to bee knowne.

To these and other now at the last, are ioyned diuers Generall pleasant Tables,  
 with many compendious Rules, easy to be had in memory, manifolde wayes pro-  
 fitable to all men of vnderstanding. Published by Leonard Digges Gentle-  
 man. Lately corrected and augmented by Thomas  
 Digges his sonne.





To the honourable Sir Edward Fines, Earle of  
Lincolne, Baron of Clinton and Say, Knight of the noble order  
of the Garter, Lord high Admirall of England, Ireland, and Wales,  
and the Dominions and Iles therof, of the towne of Calice, and Mar-  
ches of the same, Normandie, Gascoigne and Guian, and  
Captaine generall of the Queenes Maiesties  
Seas and Nauie re yall.



Ight honourable, hauing of long time sundrie  
wayes found your Lordships great fauour, not on-  
ly toward my father in his lifetime, but also to-  
ward his, most boautifull continued sithence his  
death: I haue carofully thought which way I  
might some way yeeld a testimonie of a gratefull  
mind. And perusing of late a Booke of my fathers  
to your Lordship dedicate, by negligence, or ignorance of correctors  
many wayes depraued: I determined both to amend the faults, and  
with some additions to amplyfie the same, briefly also to touch and dis-  
cover certaine errours touching matters of Navigation, transferred  
into our language. And although I haue in a peculiar volume for that  
purpose prepared to entreat at large, deliuering new Rules and Me-  
thods, hitherto in no language published, nor to my knowledge of any  
ferraine Nation practized, not onely in demonstration void of all er-  
ror, but also in practise feazible: Yet in the meane, least further bold-  
nesse by ignorance should increase, to deriue vs more errors from other  
nations, wherof our Seamen haue learned too many already: I thought  
good at the end of this booke to note some of the most used & esteemed,  
and among that faction held for Oracles; whereby in deed they haue  
boene and are (in all navigations) so misled, that were they not by sight  
of the coast, and soundings, better directed then by any treth in their  
Art, many more vessels should dayly perish. This present token therefore  
of dutifull good Will, I shall humbly desire your Lordship in good part to  
accept, meaning hereafter (God sparing life) to honour your Lordship,  
and profite my countrey with matters more rare. And in the meane  
while I humbly take my leave.

At your Lordships commaundement

Thomas Digges.

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To



## To the Reader.



O auoyd (gentle Reader) the yearly care, tra-  
uailes, and paines of other, with the confusions,  
repugnances, & manifold errors, partly by neg-  
ligence, and oft through ignorance committed:  
I haue againe briefly set forth a Prognostication  
generall, for euer to take effect: adioyning ther-  
to diuerse profitable collections, and many pleasant conclusions,  
easie of all willing ingenious to be perceiued. Here note (Rea-  
der) whereas the eleuate Pole and Meridian should be considered,  
in this worke it is performed for London, because I wish this Me-  
ridian, situation or clime the exact truth of things. If any yearly  
practises in like matters agree not with my calculations, be assu-  
red they are false, or at the least for other Eleuations or Meridi-  
ans supputated, and therefore litle seruing thy purpose. And that  
the late rude inuentions, and grosse deuises of some this yeare, and  
two yeares past published might be of them perceiued, then filed,  
and to serue to some profite: I haue purposed euen nowe to put  
forth a booke named *Pananges*, wel seruing their turne, and so ge-  
nerally and most exactly all Europe, pleasant and profitable to the  
learned, and no small delight to al maner of men. An other booke  
is also alreadie come to thy hands, entituled *Tectonicon*, a treasure  
vnto the Masons, Carpenters, Landmeaters, correcting their olde  
errours, wrongfully, reckoned of them as infallible grounds, tea-  
ching faithfully, sufficiently, & verie briefly, the true mesuration  
of all maner land, timber, stone, boord, glasse, &c. And at the ende  
containing an Instrument Geometricall appointed to their vse.  
Take in good woorth these labours (loving Reader) and looke  
shortly for the pleasant fruits Mathematicall, euen such as haue  
been promised by my friends, and partly by me. Neither shal my  
desire to profite, here stay: but intendeth further to proceede, if  
these seeme accepted. As the good will of Printers not had, kepe  
the foresaid from you: so I trust the willing mind and excellencie  
of *Thomas Gemini* shall bring them shortly vnto you. Certes my  
hope is, while life remaineth, not to be vnfruitful to this common  
wealth, with studie and practise.

Against

# Against the reprovuers of Astronomie, and Sciences Mathematical.



*I* Am diuerslye occasioned (loving Reader) somewhat to write in the commendation of the Mathematical: which neede not, but only to open the foolish rashnesse, and rashe foolishnes of such, which of late haue in writing disprayed these goodly artes. It is an olde sayde sawe, and true:

*Viruperant qui  
simpliciter eas  
ignorant.*

*Scientia non habet inimicum nisi ignorantem.* But to auoyde tediousnesse, and chieslye for the moze satisfaying, I referre all of that sorte, which haue tasted any learning (the rest not regarded) to the first parte of famous Guido Bonatus de utilitate Astronomiae in communi: where hee wyrteth *contra illos, qui dicunt quod scientia Stellarum non potest sciri ab aliquo: contra illos, qui dixerunt, quod scientia Stellarum non est utilis, sed potius damnosa &c. contra illos, qui contradicunt iudicijs Astronomia, & qui reprobant eam, ne sciens dignitatem eius, eo quod non est lucrativa.* Also for breuitye I appoynte all nice deuines or (as Melancthon termeth them) Epicurei Theologi, to his hie commendations touching Astronomy, uttered in his epistles to Simon Grineus, to Schonerus, and to the perorator of Cardanus, . bookes, where he sheweth how farre wyde they alledge the Scriptures agaynst the Astronomer, whych make wholly wyth the Astronomer. Melancthon wyrteth and affirmeth: *Arrogantiam esse cum summa stultitia coniunctam, venari choragium aliquod gloria ex infectione artiū, quae sunt graui autoritate doctorum prudentium recepta: hec calleth it manifestum insania genus, declarans quod magis opus habent Medicis, quam Geometris, aduising the learned not to geue eare vnto theyr folly. Sinamus (ait) una cum Epicuro ineptire.* Whych counsell I follow. Now therefore, yee enemies of all good doctryne, either geue an ouerthow and that with your pen, or let famous Guido, or learned Melancthon satisfie. If neyther: certes I will shortly (God sparing life) take some payne in publishing the wonderfull vnkowne pleasant profices of these disprayed high knowledges, and by that meanes to inforce science.

Now in fewe, for thy encouragement in these, thus I saye and truly, the ingenious learned, and wel experienced circumspect stu-



Stulti negligūt  
& cōtemnunt:  
qui contradicit  
ambitiosus est:  
qui maledicit,  
fatuus.

dent Mathematicall, receyueh vapy in his wittie practises moze  
pleasaunt ioy of minde, then all thy goods, (how rich soeuer thou  
bee) can at any time purchase. *Id tantum quod pulchrum est, quod  
purum est, quod diuinum est, nihil mortale sapiens dulci ardore am-  
plectitur. Et multa paucis: crede mihi, extingui dulce erit Mathe-  
maticarum artium labore.* Now to ende: that learned Guido, that  
excellent Guido Bonatus, sheweth what Astrology or Astronomie  
is, and ought not (sayth hee) by any meane to bee reprehended, in  
that the most wise, yea, the holy fathers haue practised that sci-  
ence. Wee proueth it one of the chiete sciences Mathematicall, by  
the authoritie of the best learned, and by Aristotle in his Posterior-  
um. Now commeth it to passe louing Reader, seeing it is a  
noble Science, *Et Scientia est notitia vera conclusionum, quibus  
propter demonstrationem firmiter assentimur*, that it is counted vayne  
and of so small strength: the secrete truthe and most pleasaunte  
profiteth the rein not desired, yea vicerly despised, and of some busy  
biting bodies reiected as very lies: Let no man doubt ignorance,  
the great enemy of all pure learning hath wrought this. *Nam  
incertam vocat hanc artē vulgus, propter errores, non arti, sed hominū  
indeclinabilium inscitia, & temeritati impulandos, qui citra delectum  
omnia effutunt.* Thus I leaue indigently farther to trouble: fauour  
me as I tender the furtheraunce of good learnings, profitable to  
a common wealth. Fare most hartely well, vnsayned good Christi-  
an Reader.

The



# The contentes of this booke.



From the next side to the fyft leafe are contayned the form of a Quadant, Square, Circle, Quantities, wpth a figure trulpe placing the sayde Quantities in the heauen.

From the fifteto the thirteenth, ye haue the iudgmente of weathers by the Sunne, Moone, Starres, Comets, Raynebow, Thunder, Cloudes, with extraordinary tokens and aspectes of Planets. &c.

The 13. 14. 15. and 16. leafe, shoue the causes of such alteration according to Aristotle. First of the Raynbow, then Rayne, Frost, Dew, Snow, Haple, Wyndes, Earthquakes, Thunders, Lightninges, Comets, Sunne and Moone eclipsed, Quantities of the Planetes, and theyr placing ocularly demonstrated.

The 17. the aspectes of the Moone and her signification in the 12. celestiall Signes.

The 18. 19. 20. What Signe the Moone is in and shall bee for euer, the meete tyme to let blood, to purge, to bathe, to sell timber, to sowe, to plante, to grasse, cut, gelee. &c.

The 20. and 21. haue Tables for the Sunday letter, for the Golden number or Prime, for the Epact and moueable feastes, many wayes conducing.

The 22. 23. and 24. the age of the Moone, the chaunge and quarters for euer are declared, the Ebblings and Flowings, the break of the daye, the Sunne rising, the length of the day and Night, the Twylight for all the yeare.

The 25. 26. and 27. shewe exarte pleasaunt wayes for the daye and night howre, wpth composition of meete instrumentes.

From the 29. to the 34. leafe, yee haue the peculiar Kalender, very commodious for the day and night howre.

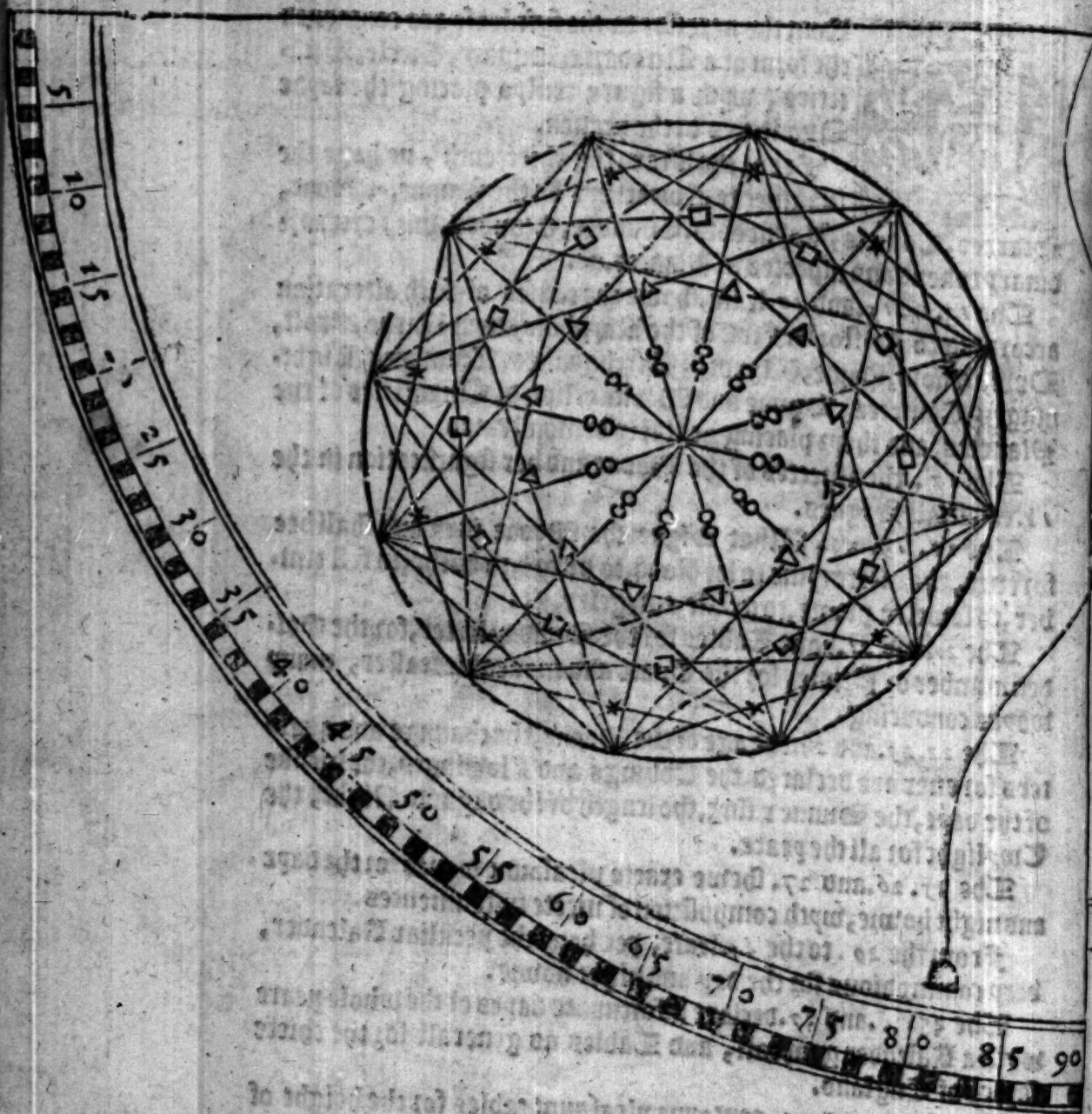
The 35. 36. and 37. declare infortunate dayes of the whole yeare wpth a Kalender generall, and Tables as generall for the chiefe sayes of England.

The 38. 39. and 40. contayne pleasaunt tables for the height of the Sunne at all howres, for right and square shadow conducing. also to the composition of many instrumentes, &c.

The 40. and 41. leafe, Collections easie to bee had in memoire.

This

This Quadrant is appoynted here to get exactly the length of Staffe and Squire shadow, how vnleuell soeuer the ground bee, as I haue sufficiently instructed in the eight and thirtith leafe.

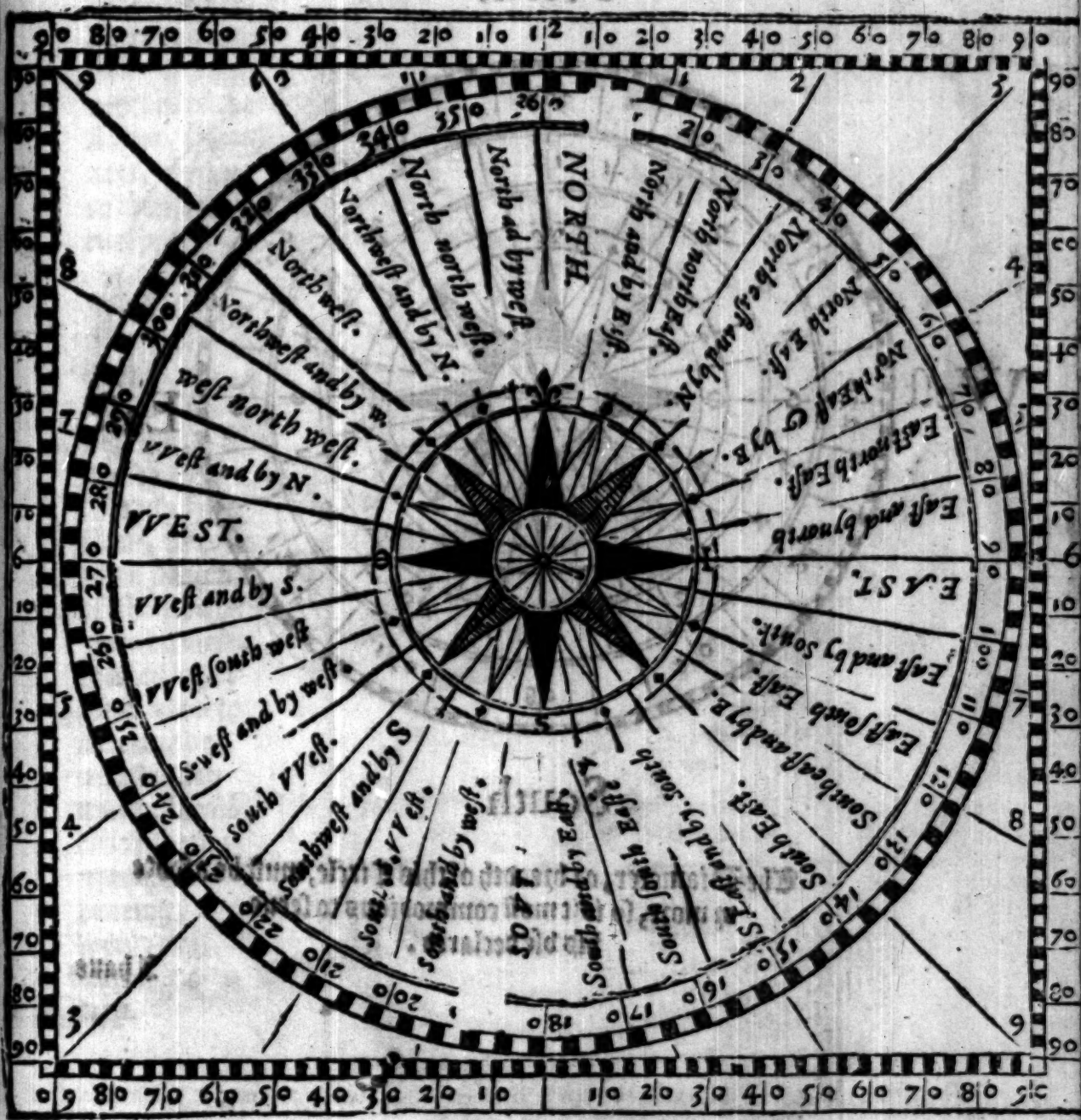


If ye list not to make a Quadrant, ye may vse this vorie well: adding a plummet and line with sights or otherwise.



This Instrument must bee made in a plaine fine mettall plate, a foote, or more square. Then it is pleasant for the houre of the day and night, either to be fixed about your house, or moueable if ye list, by a needle to be placed where and when ye will.

The 26. leafe sheweth the making.



The good Harmer may long for the vse of this Instrument : it serueth marueylously his turne.

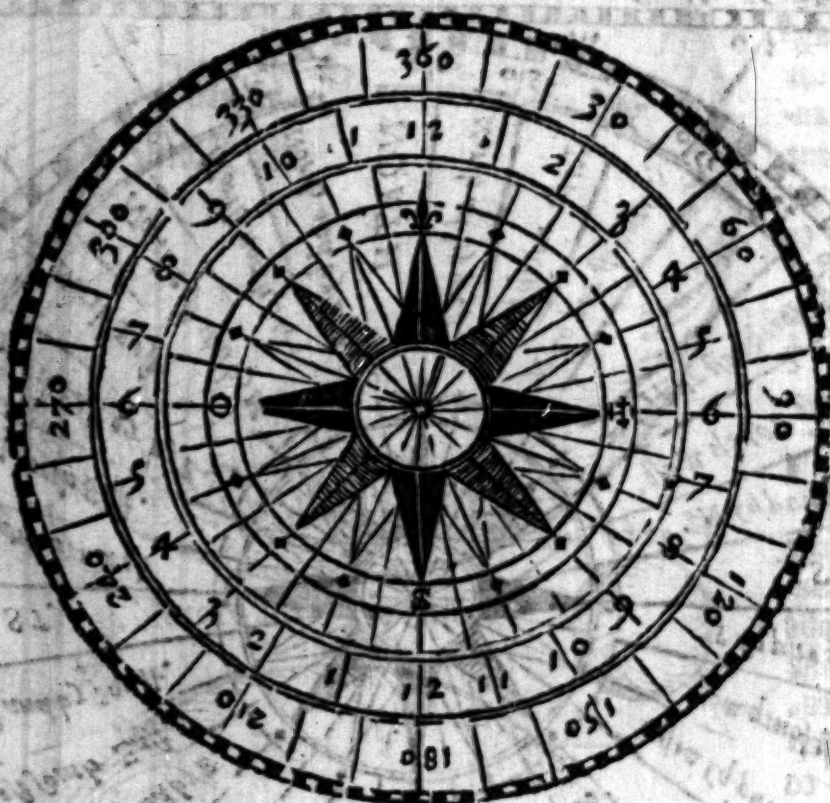


Or thus, without the Square this Circle will serve well  
your purpose, being exactly made and truly placed.

North

West

East

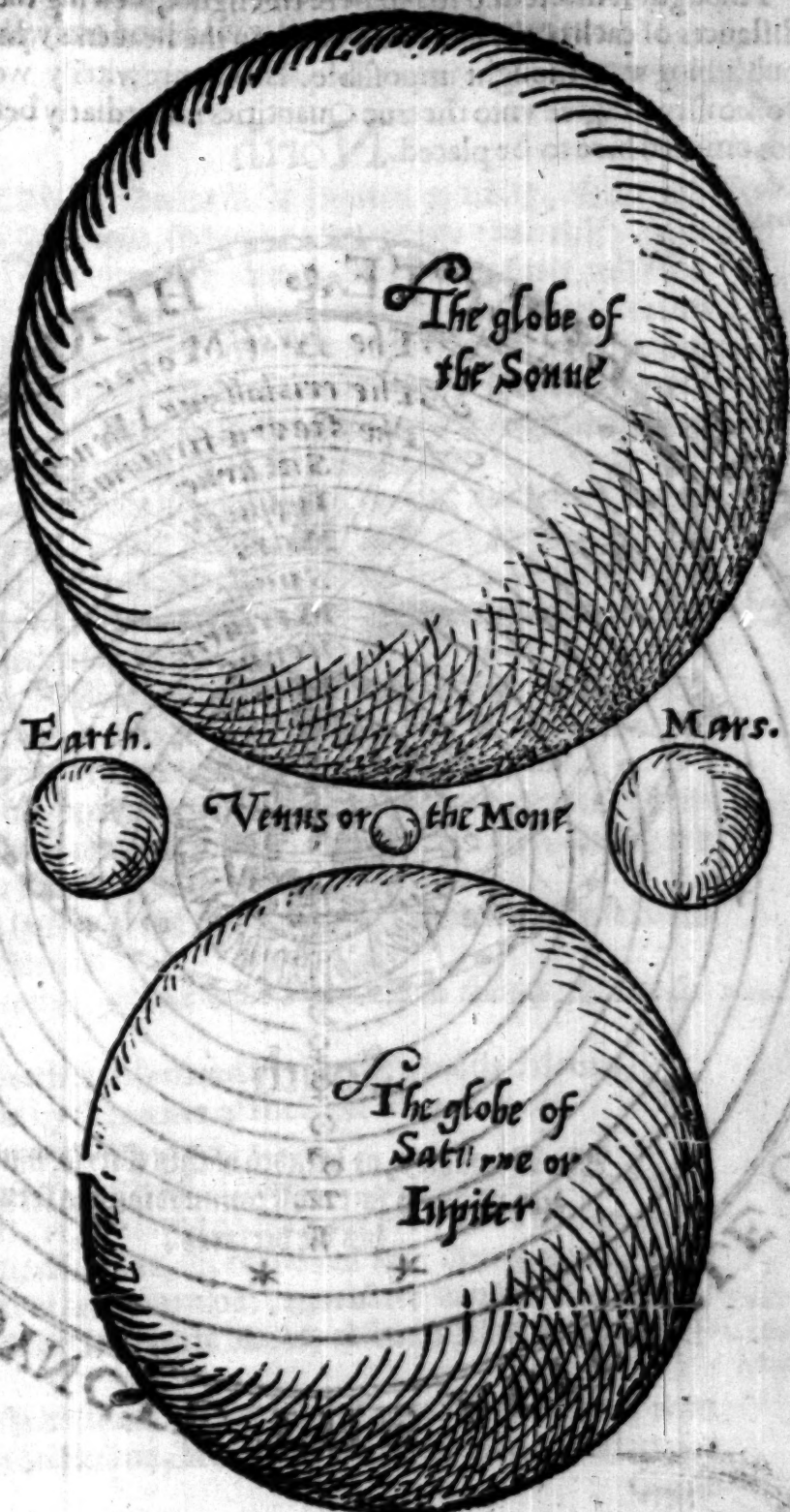


South

The Diameter, or breadth of this Circle, must be a foot  
or more, so is it most commodious to serve  
his use declared.

I have

I have placed  
ready to bee  
conceined enē  
here at þ eye,  
the true quan-  
tities or mag-  
nitudes of the  
seauen Plan-  
nets, the one  
to the other, &  
every one to  
the earth:  
which may sa-  
tisfie them þ  
scorned my  
last publish-  
ing, where I  
declared the  
Globe of the  
Sun, to con-  
taine þ Globe  
of the Mone  
7000. times.  
I would they  
were able to  
conceitue de-  
monstration  
made: then þ  
truth more e-  
vidently ap-  
pearing,  
would pull  
scorning a-  
way.



I thought it meete also to put here this figure, shewing the placing, compassing, and distances of each of the foresayd Planets in the heauen: which distances, at my last publishing were thought impossible. This figure wittily weighed, may confirme a possibility to agree vnto the true Quantities immediatly before put foorth, therefore not omitted here to be placed.





# How to iudge of weather by

5

*the Sunne rising or going  
downe.*



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dis meteoris.*

The Element redde in the evening, the next day faire : but in the morning red, winde and raine. Also the Sunne beames spotted greene, pale, or blacke, gathered to a cloude, signifieth raine. Further, the Sun at the setting plainly seene without any cloude, declareth a faire night to ensue.

Here note, Ptolome willetth vs diligently to observe the circle, or circles about the Sunne. If it be cleare, and the circle of no continuance, behold faire weather : If many of them, wind.

Winds more vehement are signified, if that the circles be somewhat redde, here and there broken : but these obscured, thicke, and blacke, looke for colde, wind, and snow.

What is spoken of the Sun, touching the circles, the same is ment of the Moone.

Note here that greater winds chaunce in the day, then in the Night.

How weather is declared by the colour of the Moone,  
and by the nature of the signe wherein she is.

**I**f the Moone in the third of her chaunge, yea, three dayes before the full, or in the middes of the quarter be found of pure light, nothing compassing her, the ende direct vp, shee promisetht faire weather, but bent to red colour, prouoketh winde. The Moone pale or somewhat inclined to blacke, obscure or thicke, threatneth raine.

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# A generall Prognostication

Guido Bonarus, with others well traualled in the mutations of ayre.

**C**onsider the nature of the signe where the Moone is at the chaunge, quarter, and full. If she be in hote and drie signes, as Aries, Leo, Sagittarius, in winter a good token of faire weather: In Sommer a great signification of immoderate heate: If in earthy, cold and drie signes, as Taurus, Virgo and Capricornus, in winter iudge cold, frost, and snow to ensue: but in sommer temperate weather. In appie and windie signes, as Gemini, Libra, and Aquarius, much wind. If in watrie, cold and moist signes, as Cancer, Scorpio and Pisces, in Winter wet weather: In sommer a pleasant temperature.

**A**lso, the Sunne in Aquarie: the Moone at the chaunce there, or in Sagittarie, or at the full in Leo, betokeneth raine. The Sunne in Pisces or Aries: the Moone in Virgo, Libra, or Sagittarie, signifieth raine, especially in watrie dwellings. The Moone in Aquarius or Pisces, looke for chaunge of weather, then chiefly she troubleth the aire. The Moone also at the chaunge, or rather at the full, in Aries, Libra, Scorpio or Pisces, tempestuous weather followeth. The Sunne in Aquarie, in Aries, Libra, or Scorpio, but chiefly in Leone: the Moone then at the full, and that after raine or missings, looke for lightning, thunder, &c. To conclude, the Moone in Cancer, Leo, Capricornus, or Aquarius, ayded with any aspect, but chiefly with opposition or Quadrat of Venus, raine followeth.

## The iudgement of weather by starres.

**B**ehold the Starres whose magnitude you know best. If they appeare of much light, in bignesse great, more blasing then they are commonly, it betokeneth great winde or moisture in that part where they shewe: in winter, cold and frost. When Starres seeme to runne in the Element, it sheweth winde. Affirme also alteration of weather, if they be few in number, clowdie, and of little light. Further, when dimme Starres appeare with long fierie tailes, iudge windes and great drought, the more in number, the greater effect. When Starres in the night (as it is sayd) shoote

v. a. f.  
Hote.  
y ny w  
Earthie.  
II ~ ~ ~  
Airie.  
S m X  
Watrie.

Cum maiora  
apparent tum  
enim Humore  
medius crasse-  
scit aer.

Moote or seeme to fall, it argueth wind in that parte. If in diuers places, inordinate winds, if in all places, then pronounce winds, thunder, lighenings, yea weather most tempestuous.

### The significations of Comets.

**C**omets signifie corruption of the ayre. They are signes of Earthquakes, of wars, changing of kingdomes, great dearth of Copie, yea a common death of man and beast.

*Pontanus sic scribens: Veniorum quoque certa dabunt tibi signa Cometa: Illi etiam belli motus, ferâque arma minamur, Magnorû & clades populorum, & funera regum, aquarum significant penuriam.*

De cometarû prodigij, lege Cardanû lib. 4. Fo. 83. & Antonium Mizaldum de Cometographia.

### How by the Cloudes, chaunge of weather is perceyued.

**I**f thicke cloudes resembling flockes, or rather great heapes of wool, be gathered in many places, they shew raine. Also when grosse, thicke, darke cloudes, right ouer the North part, or somewhat declining to the West are close with the Earth, immediately followeth raine. If they appeare like hilles, some deale from the earth, a good token of weather overpassed. Blaque cloudes signifie raine. White cloudes appearing in winter, at the Horizon, two or three dayes together, prognosticate cold and snow.

### Of the Rainbow and his effect touching alteration of aire.

**I**f in the morning the rainbow appeare, it signifieth moysture, vntilte great drought of ayre worke the contrarie. If in the evening it shew it selfe, faire weather ensueth, so that abundant moyst ayre take not away the effect.

Arcus nisi sole aduerso non sunt.

### Or thus.

**T**he Rainbow appearing, if it be faire, it betokeneth soule weather: if soule, looke for faire weather. The greener, the more raine: redder, wind.

Non apparet nisi cum vapores rarificantur vel inspissantur

### Of thunders what they signifie.

Thun.



# A generall Prognostication.

Signum futu-  
rorum bellorū.

**T**hunders in the morning, signifie wind: About noone, raine: In the Evening great tempest. Some wyse (their ground I see not) that Sundayes thunder, should bring the death of learned men, Judges and others.

Mondayes thunder, the death of women.

Tuesdayes thunder, plentie of graine.

Wednesdayes thunder, the death of harlots, & other bloodshed.

Thursdayes thunder, plentie of sheepe and corne.

Fridayes thunder, the slaughter of a great man, and other horrible murders.

Saturdayes thunder, a generall pestilent plague and great death.

How weather is knowne after the chaunge of euery  
Moone by the prime day.

Sunday Prime, drye weather, Monday Prime, moist weather.

Tuesday Prime, cold and winde. Wednesday Prime, wonderfull. Thursday Prime, faire and cleare. Friday Prime, mixt weather. Saturday Prime, moist weather.

Now ensue extraordinarie tokens for the  
knowledge of weather.

Common to-  
kens of wea-  
ther meete for  
all maner of  
wits.

**S**ome haue obserued euill weather to follow, when as watrie foules leaue the Sea, desiring land: the foules of the land fly- ing high: the crying of foules about watets making a great noise with their wings: also the seas swelling in vnaccustomed waues: If beasts eate greedily: If they lick their houses: If they sodain- ly moue here and there making a noise, breathing vp to the ayre with open nostrils: raine followeth. And the busie heauing of Houles: the appearing or comming out of wormes: Pennes re- sorting to the pearch or rest covered with dust, declare raine. The ample working of the Spinner in the ayre: the Ant bustled with her egges: the Bees in faine weather not farre wandring: the continuall prating of the Crow, cheerefully or thise quicke calling, shew tempest. When the Crow or Raven gapeth against the Sunne in sommer, heate followeth. If they busie themselves

in

in propning of washing, and that in winter, looke for rayn. The braccustomed noise of poultry, the noise of swine, of Paracocks, declare the same. The swallow flying and beating the water, the chirping of the Sparow in the morning signifie rayne. Rayne suddenly dried vp. Moody couerings straghter then of custome. Vels heard further then commonly, the wallowing of dogges, the alteration of the Cock crowing, al declare rainy weather. I leaue these, wanting the good ground of the rest. If the learned bee desirefull of the aforesayde, let them reade graue Virgill, Primo Georg: corum. At Bor. &c.

There be a multitude of other not extraordinary, but of the best knowne causes: many for breuity here omitted, the moste parte not mencioned, because they passe the capacity of the common sort, vpon all the whych the Astronomer doth well and learnedly conclude. I doubt not, there be also sometyme vnkowne matters, mitigating the aforesayde, or prouoking tempest vnlooked for, whych neither experience, ne learning hath established. How vnkynde (these considered) yea how farre from worthy thanks geuing are they, which in generall headdely do blame, checking bitterly the Astrologer, with these Iudiciary matters (the least part among a number of his most certayne doings) when thinges fortune contrary to expectation: Understande gentle Reader, the consente of a multitude famously learned in theyr buckler, euē in these matters iudiciary: Who haue wayed a long tyme prudently, the great strength, the vehement force and merueilous natures of all erraticall, and celestiaall constellations, wch theyre Angels, Radiations, Aspectes, Affections, Stations, Progressions, Defections, Dispositions, Applications, Preuentiones, Refrenations, contrarieties, Abscissions, Coniunctions, Quadratures, & Oppositions. &c. Therefore extreamely folly, yea more then madnes doth be veter, whych imbraydeth or backbiteth these knowledges, not remembryng the great & manifold benefices had through them, and that wch most certaynty in all other doinges.

What Meteoroscooper, yea who learned in matters Astro-nomicall, noteth not the great effectes, at the rising of the starre called the lile Dogge: Truly the consent of the best learned doe agree of his force yea Plinie, in his history of nature affirmeth the Seas then most fierce, wines to slowe in cellers, standing waters



# A generall Prognostication

Orionis, Ar-  
cturi, Coronæ  
Capræ, Sucu-  
larū effectus.

♂ ☐ & ♀ ☿  
cum ☉ aut ☿.  
♂ ♃ ☐ & ♀  
cum ♀ aut ☿  
☉, &c.

to moue, dogs enclined to madnesse, then most wood. Farther these constellations, Orion, Arcturus, Corona, rising prouoke tempestuous weather. The Kid and Goat, wint s. Hyades, or Succulies, raine. What Meteorologer consenteth not to the great alteration and mutation of ayre, at the coniunction, opposition or quadrate aspect of Saturne, with either two lights? Who is ignorant yea meanly trauailed in Astronomie, that Iupiter with Mercurie or with the Sunne, enforceth rage of windes? What is hee that percepueth not the fearefull thunders, lightnings and raines at the meeting of Mars and Venus, or Iupiter and Mars's &c. Leave for shame to oppugne these iudicials strongly authozised. He that any other part carpeeth, may seeme more then mad. All truth, all experience, a multitude of infallible grounded Rules are agaynst him. *Certum est omnibusque notum, quod celi motus, signorum ortus & occasus, planetarū aspectus, & coniunctiones, luminarium Eclipses, &c. certissimam, determinatam, ac infallibilem habent causam. Quid iam sane mentis negabit eorum effectus sape innotescere, utpote bella, fames, grandines, aeris perturbationes, elementorum commotiones, terra motus, & similia? Positis causis naturalibus, & non impeditis, sequitur effectus.*

The learned that listeth ingeniously to prognosticate of weather, will not onely discretely wey all before written, but consider also with them the aspects of the Planets following, and their Coniustion in the xii. Signes, with the coniunction of fixed Starres, mansions of the Moone, Ascendent, Climes, &c. Also the times or quarters of the yea must bee noted diligently (as ensueth) and iudgement accordingly pronounced.

Of the yea diuided into foure quarters.

The Spring time is hote and moist, and continueth so long as the Sunne is in Aries, Taurus, and Gemini, which is from the tenth of March vnto the xii. of June. The Summer is hote and drie, counted from the beginning of Cancer, to the ende of Virgo, that is from the twelfth of June to the fourteenth of September. Haruest is colde and drie, counted from the beginning of Libra to the end of Sagittarie, counted from the 14 day of September to the thirtieth of December. Winter is cold and moist, con-

♄ power  
ouer the breft.  
♄ ♄ ♄

♄ ♄ ♄  
Power ouer al  
flumes.

continued



nued from the beginning of Capricornus, to the end of Pisces, that is, from the twelfth of December, to the tenth of March.

*Here follow the aspects of the Planets for the better iudgement of VVeather.*

**B**Efore I declare of Planets and the signification of aspects, it behooveth briefly to open what I call Planets, and what aspects, and how they are charectered and figured. Understand there bee seaven moueable starres pleasaunt to the sight called Planets: the highest Saturne, ♄. then Jupiter ♃. Mars ♂. Sunne ☉. Venus ♀. Mercury ☿. and the Moone ☾. next to the Earth.

Now when I desire to expresse Saturne, I write this figure ♄. for Jupiter this ♃. for Mars this ♂. Thus of the other as their Charecters declare. All Radiations or aspectes are expressed as follow. A Coniunction is thus figured ☿. and it is when an other Planet is ioynd with the Sunne or Moone, or others among themselves, within one degree or lesse.

The Sextile Aspect or Radiation, is thus expressed ✱, and it is within 60. degrees the one from the other. The Quadrate aspect thus ☐, 90. degrees distant. The Trine thus △, separated 120. degrees. The Opposition thus ☊, 180. degrees the one is distant from the other.

Lo here they follow in order: the charecters of the Planetes and signes also.

☿      ✱      ☐      △      ☊  
Coniunction, Sextile, Quadrate. Trine, Opposition

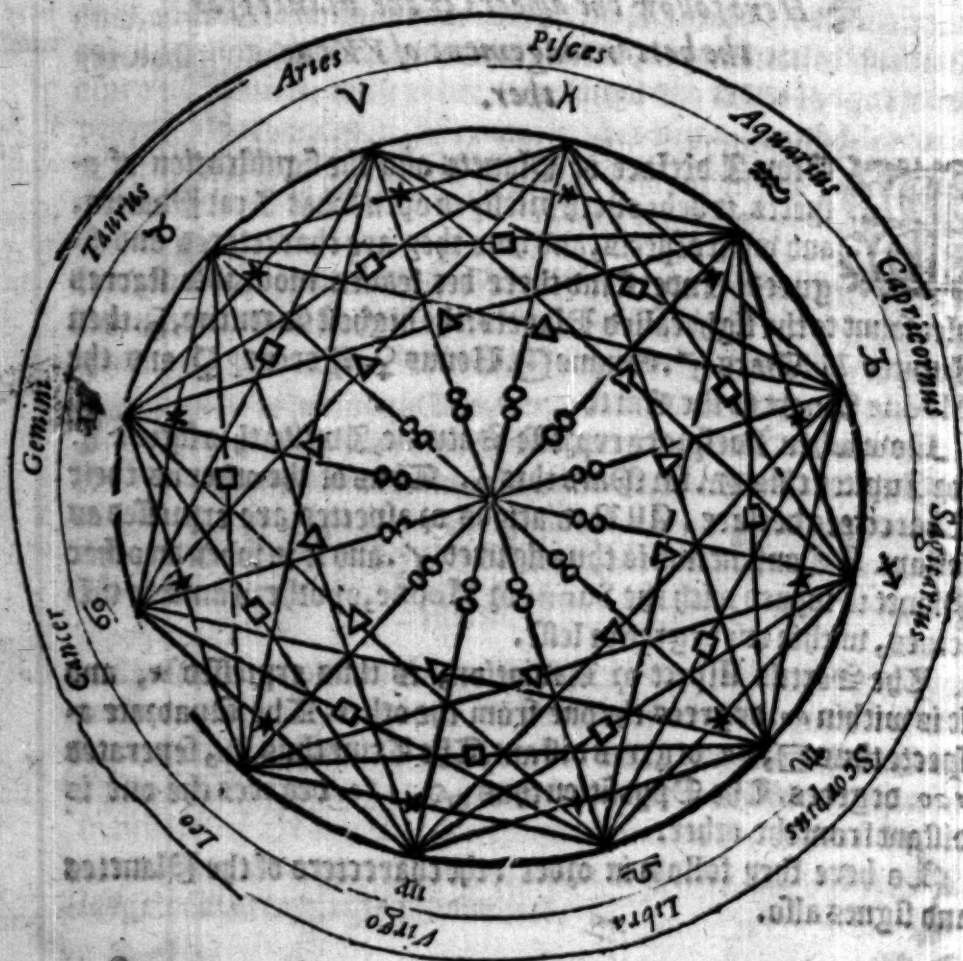
♄      ♃      ♂      ☉      ♀      ☿      ☾  
Saturn, Jupiter, Mars, Sunne, Venus, Mercury, Moone.

♈      ♉      ♊      ♋      ♌      ♍  
Aries, Taurus, Gemini, Cancer, Leo, Virgo,

♎      ♏      ♐      ♑      ♒      ♓  
Libra, Scorpius, Sagittarius, Capricornus, Aquarius, Pisces.

# 8 A generall Prognostication.

Yet for more plainesse behold this figure,



The signification of the aspects of Planets among themselves: for the iudgement of weather.

**T**he conjunction or meeting of Saturne & Iupiter, in fierie signes, en'ozeth great drought. In watte signes, floods, continuall raine, generall overflowings, &c. In ayrie signes, plentie of Winds.

The



The Quadrate, Sextile, or Opposition of Saturne with Iupiter, in moyst Signes, causeth troubled ayre, by Haple, Winde, Raine, Thunder, &c. before and after.

h □ \* & ♄  
cum ♃

The Coniunction, Quadrate, or opposition of Saturne, with Mars, in watrre Signes, declare in Sommer raine, often showers with haile, thunder and lightning.

h ♄ □ & ♄,  
cum ♄

The Coniunction, Quadrate, or Opposition of Saturn, with the Sunne, chiefly in colde Signes, shewe darke weather, haile, raine, thunder, and colde dayes.

h ♄ □ & ♄,  
cum ☉.

The Coniunction, Quadrate, or Opposition of Saturne, with Venus, in winter, engender colde and raine, principally in moyst Signes: in Sommer, mitigation of heate.

h ♄ □ & ♀  
cum ♀

The Coniunction, Quadrate, or Opposition of Saturne with Mercurie, in watrre Signes, bring raine: in hote or drie Signes, drought: in Sommer, thunder, lightnings and tempest.

h ♄ □ & ♄  
cum ♄

The Coniunction, Quadrate, or Opposition of Iupiter with Mars in moyst Signes, declare thunders, lightnings and raine: in winter snow, or cloudie thicke weather.

♃ ♄ □ & ♄  
cum ♄

The Coniunction, Quadrate, or Opposition of Iupiter with the Sunne, great and most vehement winds.

♃ ♄ □ & ☉  
cum ☉.

The Coniunction, Quadrate, or Opposition of Iupiter with Venus, in moyst Signes, cold and mistings: in the other Signes faire weather.

♃ ♄ □ & ♀  
cum ♀.

The Coniunction, Quadrate, or Opposition of Iupiter with Mercurie, great winds.

♃ ♄ □ & ☿  
cum ♄.

The Coniunction, Quadrate, or Opposition of Mars with the Sunne in fierie Signes, drought: in watrre, thunder and raine.

♄ ♄ □ & ☉  
cum ☉.

The Coniunction, Quadrate, or Opposition of Mars with Venus, in moyst Signes, raine, and tempest.

♄ ♄ □ & ♀  
cum ♀.

The Coniunction, Quadrate, or opposition of Mars with Mercurie in hote Signes, great heate: in drie Signes, drought: in watrre, Raine sometimes, thunders, lightnings, with suddaine fierce windes.

♄ ♄ □ & ☿  
cum ♄.



# A generall Prognostication.

☿ ☽ ☿ ☽  
cum ♀.

The Coniunction, Quadrature, or Opposition of Venus with Mercurie causeth rayne: in Summer they prouoke tempest, the more if they agree in watery Signes. Note what is sayd of the Coniunction, Quadrature or Opposition, the same is also ment of the Sextile and Trine, but they are of lesse signification, so the learned noteth

☿ ☽ ☿ ☽  
cum ☿.

A declaration of Weather by aspects of the Moone with the planers.

☿ ☽ ☿ ☽  
cum ♀.

The Coniunction, Quadrature, or Opposition of the Moone with Saturn in moist Signes, bringeth a cloudy day, cold ayre, according to the nature of the Signe: If she goe from Saturne to the Sunne, by coniunction or otherwise, harder Weather ensueth.

☿ ☽ ☿ ☽  
cum ♀.

The coniunction, Quadrature, or Opposition of the Moone with Iupiter in Aries or Scorpio, sheweth sayre weather, white dispersed cloudes.

☿ ☽ ☿ ☽  
cum ☿.

The Coniunction, Quadrature, or Opposition of the Moone with Mars in watry Signes, rayne. In boie Signes, diuers coloured cloudes are made, all the Element ouer. In Summer, often thunder.

☿ ☽ ☿ ☽  
cum ☿.

The Coniunction, Quadrature, or Opposition of the Moone with the Sunne in moist Signes, raynie weather. The more if the Moone go from the Sunne to Saturne.

☿ ☽ ☿ ☽  
cum ♀.

The Coniunction, Quadrature, or Opposition of the Moone with Venus, chiefly in moist Signes, rayne foloweth. The Moone going from Venus, and Mars, more varietie of weather.

☿ ☽ ☿ ☽  
cum ♀.

The Coniunction, Quadrature, or Opposition of the Moone with Mercurie in moist Signes, sheweth rayne and winde, the more when the Moone passeth from Mercurie to Iupiter, then great winds follow.

How

How the weather is iudged by the Orientall  
and Occidental station of Planets, with their

Combustion in the 12 Signes Celestiall. First

of the planets in Aries.



**S**ATVRN in Aries combust, that is to say, under  
the beames of the Sunne, maketh a cloudie darke  
troubled ayre. Orientall, I meane in the morning  
appearing befoze the Sunne, faire weather. Occi-  
dental, that is to say, shewing himselfe after the  
Sunne going downe, betokeneth great windes.

Iupiter in Aries combust, a token of raine: being Occidental, it  
bringeth cloudes, and dewes: Orientall, faire pleasant weather.

Mars in Aries combust and Occidental, good weather: contrary  
Orientall.

Venus in Aries combust Occidental, moste terrible great windes:  
Orientall, thunders and raines.

Mercurie in Aries combust, Tempest: Occidental and Orientall,  
faire windie weather.

Of planets in Taurus.

**S**ATVRN in Taurus combust and stationarie, bringeth blacke  
cloudes, thunders and troublesome weather.

Iupiter in Taurus combust, indifferent weather: Occidental,  
pleasant showres.

Mars in Taurus combust, a quiet ayre: but Orientall, windie.

Venus in Taurus combust, thunders, &c. Occidental, faire.

Of the

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## Of the Planets in Gemini

♄ in II.

**SATVRN** in Gemini combust and Occidentall, drought.

♃ in II.

**Jupiter** in Gemini combust, a good signification.

♂ in III.

**Mars** in Gemini combust and Occidentall, heate.

♀ in II.

**Venus** in Gemini combust and Occidentall, winde.

☿ in II.

**Mercurie** in Gemini combust, winde.



## Of the Planets in Cancer.

♄ in III.

**SATVRN** in Cancer combust, darke weather, great winde and troublesome weathers: Occidentall, caulmer.

♃ in III.

**Jupiter** in Cancer combust, bringeth caulme and pleasant weather.

♂ in III.

**Mars** in Cancer combust, great heate.

♀ in III.

**Venus** in Cancer combust, a quiet caulme time.

☿ in III.

**Mercurie** in Cancer combust, tempestuous weather, chiefly on the Sea: Occidentall, caulmer.

## Of the Planets in Leone.

♄ in III.

**SATVRN** in Leone combust, making winde and milings.

♃ in III.

**Jupiter** in Leone combust, pleasant winde.

♂ in III.

**Mars** in Leone combust, Occidentall, drought.

♀ in III.

**Venus** in Leone combust, drought.

☿ in III.

**Mercurie** in Leone combust, winde.



Of the Planets in Virgo.

**SATVRNE** in Virgine combust, is a significant of infirmities. ♄ in ♍

**Iupiter** in Virgine combust, manifesteth abundance of things. ♃ in ♍

**Mars** in Virgine combust, like unto Saturne. ♂ in ♍

**Venus** in Virgine combust, drought: Orientall, contrarie. ♀ in ♍

**Mercurie** in Virgine combust, drought, raging seas: Occidentall, drought. ☿ in ♍

Of the Planets in Libra.

**SATVRNE** in Libra combust, sheweth infirmitie of sight: Orientall, cold winds. ♄ in ♎

**Iupiter** in Libra combust, indifferent weather. ♃ in ♎

**Mars** in Libra combust, bringeth moisture. ♂ in ♎

**Venus** in Libra combust, moist ayre. ♀ in ♎

**Mercurie** in Libra combust, windes. ☿ in ♎

Of the Planets in Scorpione.

**SATVRNE** in Scorpio combust, ayre: Occidentall, frost: Orientall, cold north winds. ♄ in ♏

**Iupiter** in Scorpio combust, raigue: Occidentall, bitter weather. ♃ in ♏

**Mars** in Scorpio combust, declareth moisture: Oriental, winds. ♂ in ♏

**Venus** in Scorpio combust, raine, both Occidental, and Orientall. ♀ in ♏

**Mercurie** in Scorpio combust, raging weather, chiefly Oriental. ☿ in ♏

# A generall Prognostication

Of the Planets in Sagittarius.

♄ in ♐ SATVRN in Sagittarius combust, cold rainie: ayre Oriental, cold and frost.

♃ in ♐ Iupiter in Sagittarius combust, much rainie: Oriental worse weather.

♂ in ♐ Mars in Sagittarius combust, drought.

♀ in ♐ Venus in Sagittarius combust, rainie: Occidental, wind & colde.

☿ in ♐ Mercurie in Sagittarius combust, rainie: Occidental, cleare aire.

Of the Planets in Capricornus.

♄ in ♑ SATVRN in Capricornus combust, signifieth dark weather, with South winds: Occidental, colde: Oriental, north winds.

♃ in ♑ Iupiter in Capricornus combust, moist aire: Occidental, increase the same.

♂ in ♑ Mars in Capricornus combust, cloudie: Occidental, some heate.

♀ in ♑ Venus in Capricornus combust, cold aire: Oriental, rainie.

☿ in ♑ Mercurie in Capricornus combust, rainie both Oriental and Occidental.

Of the Planets in Aquarius.

♄ in ♒ SATVRNE in Aquarius combust, cold ayre: Occidental, dangerous seas: Oriental, rainie.

♃ in ♒ Iupiter in Aquarius combust, Occidental, rainie.

♂ in ♒ Mars in Aquarius combust, drought: Occidental, & Oriental plentie of winds.

♀ in ♒ Venus in Aquarius combust, cloudie: Occidental, hot: Oriental, rainie.

☿ in ♒ Mercurie in Aquarius combust, snow: Occidental, more colde, Oriental rainie.

Of the

Of the Planets in Pisces.

**SATVRNE** in Pisces combust, bringeth cloudes: Occiden. ♄ in ♋  
call, raine.

**Iupiter** in Pisces combust Orientall, causme waters. ♃ in ♋

**Mars** in Pisces combust Occidental, brought: Orientall, light. ♂ in ♋  
ning and thunders.

**Venus** in Pisces combust, cold: Occidental, disposed to snow. ♀ in ♋

**Mercurie** in Pisces combust, moyst ayre. ☿ in ♋

Thus much of the iudgement of weather.

**S**eing that I haue now sufficiently declared how, by what rules  
and tokens weather is iudged: I thinke it convenient to adioine  
here a brieft collection, how Plentie, Scarcitie, Sicknesse, Death,  
Alterations, Troubles, Warres, &c. are for euer perceived.

A rule to prognosticate the aforesaid by the falling  
of Newyeres day.

**I**t is affirmed of some, when Newyeres day fall Sunday.  
leth on the Sunday, then a pleasant Winter dooth  
ensue: a naturall Sommer: fruit sufficient: Haruest  
indifferent, yet some winde and raine: many ma-  
riages: plentie of wine and home: death of young  
men, and cattell: robberies in most places: newes of Prelates, of  
Kings: and cruell warres in the end.

**O**n Monday, a Winter somewhat vncomfortable: Sommer Monday.  
temperate: no plentie of fruit: many fantasies and fables opened:  
agues shall reigne: Kings and many others shall die: Marriages  
shall be in most places: and a common fall of Gentlemen,

**O**n Tuesday, a stormy Winter: a wet Summer: a diuers Har. Tuesday.  
uest: coyne and fruit indifferent, yet hearbes in gardens shall  
not flourish: great sicknesse of men, women, and young children.



# A generall Prognostication

Beastes shall hunger sterue, and die of the botch: many Shippes, Gallies and Pulkes, shall be lost: And the bloodie Fluxes shall kill many men: All things deare, saue cozne.

**Wednesday** **O**n Wednesday, Lo a warme winter: In the end snowe and frost: a cloudie Sommer, plentie of fruite, of Cozne, Hay, Wine and Honie: great paine to women with childe, and death to infants: good for sheepe: newes of kings: great warres, battell and slaughter toward the middes.

**Thursday.** **O**n Thursday, Winter and Summer windie: A rainie Haruest: Therefore we shall haue overflowings. Much fruit: plentie of honie: yet flesh shall be deare: cattell in generall shall die: great trouble, warres, &c. With a licentious life of the feminine Sexe.

**Fryday.** **O**n Fryday, Winter stormie: Summer scant pleasant: Haruest indifferent: little store of fruite, of wine, and honie: cozne deare: Many bleare eyes: youth shall die: Earthquakes are perceived in many places: plentie of thunders, lightnings, and tempests: with a sudden death of cattell.

**Saturday.** **O**n Saturday, a meane Winter: Summer verie hote: a late Haruest: good cheape garden hearbes: much burning: plenty of Pempe, Flaxe, and honie. Dye folke shall die in most places: Fevers and Tercians, shall grieve many people: great muttering of warres: murders shalbe suddenly committed in many places, for light matters.

**N**owe that I haue opened diuers wayes, both for the learned and vnlearned, how weather to come at all times may be well iudged and knowne, &c. I thought it meete, for further knowledge therein, not to omit here the naturall causes of such and so manie alterations of ayre. Lo, therefore orderly they follow.

Naturall

Naturall causes, conducing to all the aforesayd :

and first of the Rain-Bow.

W

**T**he Raynbow is the shining and rebounding of beames of light, that turne to the contrarie vapour agayne in the cloud. It declareth sometime rayne, and many times sayre weather: whē the one, and how the other, is before opened.

Of rayne.

**R**ayne is a colde vapour, an earthy humour, of humolities, one of waters of earth drawne by by the virtue of the Sunne, to the neather part of the middle space of the ayre, there through cold thicked, then dissolved: Thus engendred falleth on the earth.

Here I leaue to speak of miraculolus raines, as Milke, Blood, Flesh, Iron, Wool, &c. For more satysfying in these, seade Plynius in the second booke. 58. Chapter.

Of Frost and Dew.

**A** Colds moist vapour, a little way drawen by in the day the row saynt heat of the Sunne, descendeth in the night, dissolved on the earth, there congelated or resolved into water, the one called Frost, the other Dew. The last is a signe of sayre weather in the Spring or Haruest.

Of Snowe.

**I**t is a moist vapour, drawen by to the middle region of the ayre, then thicked, and frozen into the body of a cloude: So congelated descendeth.

Of Hayle.

**A** Cloude resolved into water, in the fall congelated, maketh Hayle. The higher it commeth from aboue, and the longer it tarieth in the ayre, the rounder hayle.

Quare lapides pluuię lege Pl. Lib. 2. cap. 44.

Ros æstate, pruina hyeme fit.

Nix humor modice concretus.

Grando pluuię in descensu congelata.



# A generall Prognostication

Of Windes.

Ventorum ergo materia, calida & sicca exhalatio.

**W**Inde is a multitude of drie exhalations, dratone by from the earth : and aboute the earth enforced here and there.

Quemadmodum in nube tonitruum, sic in terra tremor.

Of earthquakes in the most quiet time.  
**P**lentie of winds, entered into holes, cones, or canes of the earth, which absent from aboute the earth cauſeth quietnesse : the violent bursting out of them (the earth closed againe) is the Earthquake : Signum est futurorum bellorum.

Signa terre motus.

Tokens of Earthquakes to come.

**A** fire cloude, appearing in the element like a little pillar, is a token of earthquakes to come. The obscuritie or darknesse of the Sunne, without cloudes, and straungely coloured, bloodie or otherwise, is a token of Earthquakes.

Also when Well water & others are troubled, or salt, or infected by saour, &c.

A great quietnesse of ayre by lande and sea, and chiefly the long absence of windes.

Also strange noises heard, as clamours of men, rushing of barnes, mournings, lamentations, &c. All these haue bene obserued to signifie Earthquakes at hand.

Of thunders and lightnings.

Fulgetrum prius cerni, quam tonitruum audiri, cum simul fiat certum est, Plin. lib. 3. Cap. 56. Contra. Aristo.

**T**hunder is the quenching of fire in a cloude. Or thunder is an exhalation hote and drie, mixt with moysture, caried vp to the upper region, there thicked and wrapped into a cloude : of this hote matter coupled with moistnes closed in the cloude, groweth a strife, the heate beating, and breaking out the sides of the cloude with a thundring noise: the fire then dispersed is the lightning.

Thus for the learned: *Tonitruum sonitus est, qui editur quando nubes rumpit halitus. Fulmen flamma, vel repentinus est ignis, qui ex collisione nubium, aut raptura nascitur.* Aristotle affirmeth the lightning after thunder, but the fire both first appeare, in that the sight is before the hearing. If this satisfie not, reade the second of his Meteoron, here foloweth a note of lightnings.

There

There be three kindes of Lightnings, drie,  
moyst, and cleare.

**D**rie doe not burne but cleane, part or diuide. Moyst, burne Note,  
not, but alter colour. The cleare are of maruellous natures:  
Full barrels by it are emptied. It melteth mony in the purse, it  
broketh the sword, the purse and scabbard not perished, yea, waxe  
in them vnmolten.

Of the Comets or flames in the night.

**A** Comet is a flame working in a drie, hote, slimie exhalation,  
drawen by to the highest part of the ayre. His matter of sub-  
stance after it is burnt, and dispersed, prouoketh winds.

The naturall cause of the Sunne eclipsed.

**N**othing else is the Eclipse of the Sunne, but the direct put-  
ting the bodie of the Moone betweene the Sunne & the earth,  
or betweene our sight and the Sunne, which chaunce onely at the  
change.

A Corollarie.

**B**y this, gather the darkenesse at Christs death not to stande Miracle.  
by naturall eclipsicall cause: but by supernaturall, or myracle.  
For it was at the full Moone, Scriptures witnesse: which enfor-  
ced Dionisius Areopagita at the time of his passion, to speak thus:  
*Aut Deus natura patitur, aut mundi machina dissoluitur.*

The cause of the Moone eclipsed.

**T**he Sunne being in the contrarie poynt to the full Moone, en-  
forceth the shadow of the earth then directly put betweene the  
Sunn and the Moone, toward the Moone, hiding more or lesse  
of the Moone, as she differeth from the Eclipticall. Some ob-  
serue pestilent plagues, suddaine battell, great dearth, to en-  
sue these Eclipses: which all I desire God to auert from his  
chosen. Manie other things by these Eclipses are gathered,  
as Longitudes of Countreys, the Quantitie of the Sunne, con-  
taining the bignesse of the Earth 162. tymes: the compasse of the

Vniuersalis est  
Eclipsis Lune.  
Non semper in  
nouilunio, sed  
in capite &  
cauda.



# A general Prognostication.

Omnium plan-  
netarum ad  
terram mag-  
nitude.

the earth 21600. in the whole thickness, according to Archime-  
des rule is 6872. miles, and eight elevenths of a mile.

The quantity of the Moone is the 43. parte of the earth.

The Sunne containeth the Globe of the Moone 7000. times.

Saturnus comprehendeth the bignesse of the earth 97. times.

Iupiter. 95. times. Mars. once, and ten sixteenths. Venus, the 37.

parte. Mercurius. one, 9 2000. parte of the earth.

Note here, that Alfraganus affirmeth the leasse fixed Starre  
perfectly seene, as bigge as the whole earth.

Dimetiens  
ad terrę dime-  
tientem unde-  
cim ad duo.

Cubus 1313  
Terrę, 8.

Dimetiens ter-  
rę ad diam. 17.  
ad 5. Cubus  
terrę 149 13.  
Cubus 125.

**H**æc non erunt admirationes, si globi capacitatem ex longitudine  
diametri quæsieris. Continet enim solis dimetiens terra dimeti-  
entem quinquies & semissem. Est q. proportio diametri Solis ad terra  
dimetiuentem, quæ est numeri undecim ad duo, quintupla sesquialtera.  
Cubus solis mille trecentum unum & triginta partes tales continet, cu-  
iusmodi terra cubus octonae complebitur. Cubus enim numeri unde-  
cim, est mille trecentum unum & triginta. Cubus verò binarij, qui est  
terra, octo. Subducto quoties id fieri potest, minore cubo qui est terra, a  
maiore qui est solis, cognoscitur cubi ad cubum proportio, & quanto Sol  
maior terra sit. Inuenimus ergo octo centies, sexagies sexies, in mille  
trecentum uno & triginta.

Terra Diametros Luna dimetiens complebitur ter, & duas e-  
ius diametri portiones quintas: est q. ea proportio dimetiuentis terra ad  
Luna diametrum, quæ est septendecim ad quinque tripla superbi par-  
tiens quintas. Cubus numeri septendecim est quater mille nonaginta  
terdecim. Cubus numeri quinque est centum viginti quinque. Maiore  
cubo per minorem distributo, reperimus numerum centum viginti  
quinque, tricies nonies in quater mille nonaginta tredecim: quod pau-  
lulum a superioribus observationibus differt.

The quantities or rather true proportion of all the  
Planets vnto the earth, ocularly demonstrated  
by figure following.

The



Earth.

Mars.

Venus or the Moon.

The globe of  
Saturne or  
Iupiter

Mercurie is but a poynt in respect of these Quantities.



# A generall Prognostication

**B**y these five Globes are represented the true magnitudes of the seven Planets. One Globe of like magnitude appointed for Saturn and Jupiter: Euen so for the Moone and Venus: the rest haue seuerall Globes (as ye may see) according to their quantities.

The nature, course, colour, and placing of these seven Planets, according to Ptolomie.

- ♄ **SATVRN** is the highest and slowest in proper motion, colde, drie, and pale, like vnto Lead colour, requirring thirtie yeares to end his course. Di. 9. ad 2.
- ♃ **I**Vpiter is next vnder Saturne temperate, faire and bright: his course is performed in 12. yeares. Di. 32. ad 7.
- ♂ **M**ARS is hote and drie of fire colour, in two yeares endeth his course. Di. 7. ad 6.
- ☉ **T**he Sunne is placed in the middle of all the Planets: most cleare and bright, the well of pure light: every yeare finishing his course. Di. 11. ad 2.
- ♀ **V**ENUS is next to the Sunne, colde, moyst, and cleare: pra more bright then Iupiter, her course is like vnto the Sunnes: neuer above 48 degrees from the Sunne: called the morning starre when she goeth before the Sunne, comming after the Sunne shee is named the euening starre. Di. 3. ad 10.
- ☿ **M**ERcurie is next vnder Venus, somewhat shining, but not verie bright: neuer above 29. degrees from the Sunne, his course is like to Venus, or the Sunnes motion.
- ☾ **T**he Moone is lowest of all the seven, running over the whole Zodiacke in 27. dayes, and 8. houres, and somewhat more. Di. 5. ad 17.

For more plainnesse of that which is opened, nowe shall follow a figure, by the which ye may perceiue howe the Orbe of the one Planet compasseth the other. Also, how these Planets are placed in the heauen: yea, which Planet is highest from the earth: & which nearest vnto vs. Consider well this figure, so needeth no farther declaration.





# A generall Prognostication

We may here beholde first the Elementall part subiect vnto alteration, consisting of the foure Elements, first Earth and Water, whereon we are: then Ayre and Fire. The other Etheriall part, (which the Philosophers call quince essence) containeth the ten Orbes: the bigger compasseth the next lesser, as the figure before sheweth. It beginneth at the Moone, then Mercurie, Venus, &c. in height more and more. As the figure declareth Saturn to be the highest Planet: so is the Moone lowest.

The distance or miles that the Moone is from the Earth, and euery Planet from other.

*Hec incredibilia videntur tantum ijs qui Mathematicis demonstrationibus non assueuerunt, &c.*

**A**s some haue published, it is from the Earth to the Moone, 15750. miles.

From the Moone to Mercurie, is 12812 miles.

From Mercurie to Venus, as manie miles.

From Venus to the Sunne, is 23437. miles and a halfe.

From the Sunne to Mars, is 15725. miles.

From Mars to Iupiter, is 78721. miles.

From Iupiter to Saturne, as many miles.

From Saturn to the Firmament, 120485. miles.

The whole summe from the Earth to the Firmament, is 358463. miles and a halfe.

Here Demonstration might be made of the distaunce of these Orbes, but that passeth the capacite of the common sort.

The natural operations of these Planets by coniunction, opposition &c. ensueth: but more largely of me opened in a pleasant booke, shortly to be published. First here will I end the naturall causes of many Sunnes and Moones: then of the Planets by coniunction.

The naturall causes of many Sunnes or Moones.

*Milichius noteth the king of Pole to haue seene 6. Sunnes at once.*

**T**hese come to passe, when a thicker cloude is gathered towarde the side of the Sunne or Moone, in the which the broken beames of the Sunne do leaue the fashion and verie forme of that Sunne. Thus as followeth, sayth Plinius in his second booke of the historie of Nature, and thirtie one Chapter. No mo Sunnes are perceyued in our time then thre: and they are neuer



neuer seene, either aboue or beneath the Sunne, but on the sides: neuer in the night, but only at the Sunne rising or going downe.

What is to be chosen or auoyded vnder euerie aspect of the Moone, with her signification in the 12. signes touching the same.

**T**he Coniunction, Quadzature, or Opposition of Saturne with the Moone, causeth an euill vnluckie day for all matters. Leaueth therefore to haue to do any maner way: nothing shall prosper or come well to passe then attempted. Yet the Sextile or Trine of Saturne with the Moone, declareth a conuenient time to till, delue, or digge, to sow, to lay foundations, to erect or repayre houses, yea, a meete time to obtaine suites of fatherly farmers. The Moone in Capricornus or Aquarius, bringeth this latter effect of the Sextile and Trine.

The Coniunction, Sextile, Trine, Quadzature or Opposition of Iupiter with the Moone, sheweth a fortunate day, chiefly to obtaine suites of Kings, noble Princes, Prelates, of Lawyers and Religious persons: and a meete time to studie, to iourney, to take an honest matter in hand. The Moone in Taurus, in Leo, or Sagittarius, sheweth the same.

The Coniunction, Sextile, Trine, Quadzature or Opposition of Mars with the Moone, warneth thee not to match thy selfe that day with warriors: notwithstanding verie good and most meete to finish all maner fire workes: naught to iourney: yet most conuenient for valiant captaines to worke their fear, to leade, encourage or stomacke their souldiers: most vnmeete to treat peace, to take seruants, or to seeke friendship.

The Coniunction, Quadzature or Opposition of the Sunne with the Moone, declareth a verie unhappy day for all matters: therefore attempt nothing, ne any maner suite, neither plant, build, ne iourney. Yet the Sextils and Trine are verie fortunate, specially to obtaine suit of Kings, Princes, and other Nobles. The Moone in Aries, enforceth the effect of this latter part.

# A generall Prognostication

☿★△□  
vel ☿ cum ☽

The Coniunction, Sextile, Trine, Quadrature, or opposition of Venus with the Moone, causeth a day most apt to obtaine all suites of women, good to woo, to attempt marriage, and to follow all maner pleasures, and pleasant pastimes: not vnmeet to hire servants, to let blood, &c. The Moone in Libra or Pisces prouoketh the like.

☿★△□  
vel ☿ cum ☽

The Coniunction, Sextile, Trine, Quadrature or Opposition of Mercury with the Moone, promiserh a fortunate happie day to buy and sell: very good to enter childzen in liberall Arts: an apt time for the Versifier: good to vse Marchaundise, to iourney, to send embassage, to giue accounts, and such like.

☽ in II. ☽ vel  
☽.

The Moone in Gemini, Cancer, or Virgo, enclineth euen to the same aforesayd.

☽ in ♀

The Moone with the Dragons head, sheweth a luckie day for all matters: with the taile, contrarie.

Now ensueth a Table shewing what Signe the Moone is in, and shall be for euer: declaring also the meetest time to let blood, to purge, and to bathe.

The Table hath at the head seuen titles. The first moneths: the second dayes: then the Prime: the twelue Signes: the times to let blood, to purge, and to bathe.

Here is to be noted, that those dayes are good for these purposes, which be signed with this letter G: and those euill dayes, that are noted with B.

This

This Table declareth for euer, in what Signe the Moone is or shall be at any daye in the yeare. It serueth also very well to let Bloud, to Purge, and Bathe.

Monethes.	Dates.	Prime.	The 12. Signes.	To let Bloude	To Purge.	To Bathe.
Febr. Nouë.	1	3	Aries.	G	B	G
Marche.	2		Aries.	G	B	G
	3	14	Taurus.	B	B	B
Decembre.	4	6	Taurus.	B	B	B
	5		Gemini.	B	G	
Aprill.	6	17	Gemini.	B	G	
	7	9	Cancer.		G	G
Maie.	8	1	Cancer.		G	G
	9		Cancer.		G	G
	10	12	Leo.	B	B	G
	11	4	Leo.	B	B	G
Iune.	12		Virgo.	B	B	B
	13	15	Virgo.	B	B	B
Iuly.	14	7	Libra.			
	15		Libra.			
	16	18	Scorpius.		G	G
	17	10	Scorpius.		G	G
Auguste.	18	2	Scorpius.		G	G
	19		Sagittarius.	G		G
	20	13	Sagittarius.	G		G
	21	5	Capricornus	B	B	B
Septembre.	22		Capricornus	B	B	B
	23	16	Aquarius.			G
Ianua. Octo.	24	8	Aquarius.			G
	25		Pisces.		G	G
	26	19	Pisces.		G	G
	27	11	Pisces.		G	G

A Table for letting of blood. &c



# A generall Prognostication

**S**eeke out vnder the titles of the Moneths, the name of þe moneth, whose day you must looke out right against the moneth, vnder the title of dayes, and there beginne to tell downwards, 1. 2. 3. &c. to the end, if it so require, and then from the beginning, if neede bee, vntill ye haue reckoned the number of the day that you seeke. Looke what number it falleth vpon in this table vnder the title of daies: that number keepe in mind. Then seeke vnder the title of the Prime, the Golden number for the yeare, right against that, leftward vnder the title of daies: begin to tell downewards, 1. 2. 3. &c. vntill you haue reckoned the number which you did keepe in mind. Agaynst that, towards your right hande vnder the title of Signes, is the signe wherein the Moone shall be that day. Euen then vnder the other titles, ye shall finde in right order for letting Blood, for Purging and Bathing, according as they be noted with G. which is good, and B. signifying bad.

## Ensample.

The sixt day of March in the yeare of our Lord 1555, I desire to know what celestiall signe the Moone doth then occupie. I finde first the name of the Moneth, that is March: and the day as followeth, in the next order of this table. I beginne here to tell right against my moneth, at the figure of 2. saying, 1. 2. 3. &c. so I haue at the end & count of six dayes this figure 7. which I keepe in mind. Now I must seeke out the Golden number for the yeare aforesaid, vnder the title of the Prime here, that is 7. against the which on the left side is 6. There ye must beginne againe to count, 1. 2. 3. &c. vntill you come to your number 7. So on your right hand in the rowe or order, you shall see Virgo, the celestiall Signe that the Moone is in: and after that these three letters B, which declare bad, or euill to let Blood, to Purge, or Bathe, agreeable to the titles in the head G. there had signified good.

Forasmuch as letting of Blood, Purging, and Bathing, Inundations, Floods, Timberfalling, Sowing, Planting, Graffing, Cutting, &c. depende chiefly on the Signe wherein the Moone is, which I haue euen before plainly opened: I thought it meete to haue them now orderly touched as followeth.

# Profitable Rules.

A conduible note for letting blood.

**L**et blood at no time without great cause, for it bringeth weakenesse and many infirmities. If ye doe, see it bee after good digestion, and fasting, in a faire temperate day. Beware be-  
foze of all maner exercises, bathings, watchings, and carnall copu-  
lation, &c. After vse fine meates, of light digestion, abstaining  
from all the aforesayd, vntill the fourth day.

19

Malum mi-  
nui, vel purga-  
tionibus vti,  
tempore calo-  
ris, propter de-  
fectu humoris.

These Signes are most dangerous for bloodletting, the Moone  
being in them: Taurus, Gemini, Leo, Virgo, and Capricornus,  
with the last halfe of Libra, and Scorpius. The rest are al good, so  
the Moone beare no dominion in that member which ye cut: as  
followeth.

Ill to let  
blood in ♈  
♊ ♋ ♌ ♍

Behold this figure.



# Profitable rules

## The Dominion of the Moone in mans Body.

Aries	The	Head, and Face.
Taurus		Necke.
Gemini		Armes, Handes, Shoulders.
Cancer		Breast, Stomacke, Ribbes.
Leo		Heart, Backe.
Virgo		Bowells, Belly.
Libra		Royns, Naill, Buttocks.
Scorpius		Secrete members.
Sagittarius		Thighes.
Capricornus		Knees.
Aquarius		Shinnes, Legges.
Pisces		Feete.

From the chaunge to the first quarter, a meete time to let young men bloude.

From the first quarter to the Full, good for middle age.

From the Full to the last quarter, apt for aged folke.

From the last quarter to the chaunge, best for olde men.

## Signes meete for the Complexions.

Aries.	}	For the Flegmatike, the head, and thighes excepted.
Sagittarius.		
Libra.	}	For Melancholike: buttocks, and legges excepted.
Aquarius.		
Cancer.	}	For Cholerike: breaste, members, and feete excepted.
Scorpius.		
Pisces.		

Hec diligentissimè obseruare oportet solent Medicum, nisi maiora periculacogant.

For the Sanguine, all be apt that tofore are named good.

In the spring time, let bloude at the right side.

In Haruest time, at the left side.

The learned Philition will consider, beside all that is sayd, the Coniunctions, Oppositions, and Quadrar aspectes of the Planets:



nets : with many other things Astronomicall , most necessarie,  
both in bloodletting, purging, bathing, &c.

For to take purgations, and to bathe.



The meetest time to take purgations, &c. is neither  
in hot, nor cold dayes : that is, from the tenth of  
March, to the twelfth of Iune.

Further by rules Astronomicall, it must be per-  
formed when the Moone is in cold, moist, and wa-  
trie signes, as, Cancer, Scorpius, and Pisces : com-  
forted by aspects and radiations of Planets, fortifying the vertue  
of the bodie expulsive.

The Moone in Aries, Taurus, and Capricornus, naught. One  
cause of vomiting the purgation is, if the Moone haue aspect to a  
nie Planet retrograde.

The Moone in these signes following, very good to bath: Ari-  
es, Leo, Sagittarius, Cancer, Scorpius, and Pisces.

These ensuing are euill to bathe, Taurus, Virgo, Capricornus.

Of inundations or floods : of timber falling, sowing, planting,  
graffing, haire clipping, shauing, and gelding.

The flood is biggest at the full : because then disperling her ver-  
tue, she filleth all places with moisture. By common experience  
toynd with learning I knowe, at the full the Moone loveth all  
bodies with humors : and so are emptied, growing to the chaunge.  
Of this some gather the fall of timber at the chaunge, moze to the  
purpose then other times, wanting then superfluous moisture, the  
cause of putrefaction, *Omnis putredo ab aqueo humido ortum habet.*  
*Schoner* willet from the 15. day unto the 22. day of the Moone  
trees to be felled, & that after Midsummer to Ianuarie. So timber  
is strong, sound, and boyd of woymes.

To Sow : Taurus, Cancer, Virgo, Libra, and Capricornus, are  
best in the sic reale of the Moone.

To Plant or Graffe, is best when the Moone hath her being  
in any fixed Signe, either in Taurus, or Aquarius in the encrease.

Good to purge  
S m X

Bad to purge.  
Y d w

Good to bathe  
Y N F S  
m X

Bad to bathe.  
Y m w

The fall  
Timber.

Good to Sow.  
d S m w

To plant or  
graffe. d m

# Profitable rules

## The Dominion of the Moone in mans Body.

Aries  
Taurus  
Gemini  
Cancer  
Leo  
Virgo  
Libra  
Scorpius  
Sagittarius  
Capricornus  
Aquarius  
Pisces

The

Head, and face.  
Necke.  
Armes, Handes, Shoulders.  
Brest, Stomacke, Ribbes.  
Heart, Backe.  
Bowells, Belly.  
Rayns, Naill, Buttocks.  
Secrete members.  
Thighes.  
Knees.  
Shinnes, Legges.  
Feete.

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Libra.  
Aquarius.

} For Melancholike: buttocks, and legges excepted.

Cancer.  
Scorpius.  
Pisces.

} For Cholerike: bresta, members, and feete excepted.

Hec diligentif-  
simè obferuare  
oportet solenè  
Medicum, nisi  
maiora pericu-  
lacogant.

For the Sanguine, all be apt that tofore are named good.

In the Spring time, let bloude at the right side.

In Haruest time, at the left side.

The learned Philition will consider, beside all that is sayd, the Coniunctions, Oppositions, and Quadrat aspectes of the Planets:

nets : with many other things Astronomicall , most necessarie,  
both in bloodletting, purging, bathing, &c.

For to take purgations, and to bathe.



The meetest time to take purgations, &c. is neither  
in hot, nor cold daies : that is, from the tenth of  
March, to the twelfth of June.

Further by rules Astronomicall, it must be per-  
formed when the Moone is in cold, moist, and wa-  
trie signes, as, Cancer, Scorpius, and Pisces : com-  
forted by aspects and radiations of Planets, fortifying the vertue  
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Of this some gather the fall of timber at the chaunge, moze to the  
purpose then other times, wanting then superfluous moisture, the  
cause of putrefaction, *Omnis putredo ab aquo humido ortum habet.*  
*Schoner* willet from the 15. day vnto the 22. day of the Moone  
trees to be felled, & that after Midsummer to Ianuarie. So timber  
is strong, sound, and boyd of wormes.

To Sow : Taurus, Cancer, Virgo, Libra, and Capricornus, are  
best in the increase of the Moone.

To Plant or Graft, is best when the Moone hath her being  
in any fixed Signe, either in Taurus, or Aquarius in the encrease.

Good to purge  
S m X

Bad to purge  
Y O W

Good to bathe  
Y O F S  
m X

Bad to bathe  
O m W

The fall  
Timber.

Good to Sow.  
S S m S

To plant or  
graffe. S m



# Profitable rules

To cut haire.

♄ ♃ ♎

Shaype cut groweth well, the Moone encreasing, being in Tan-  
rus, Virgo, or Libra.

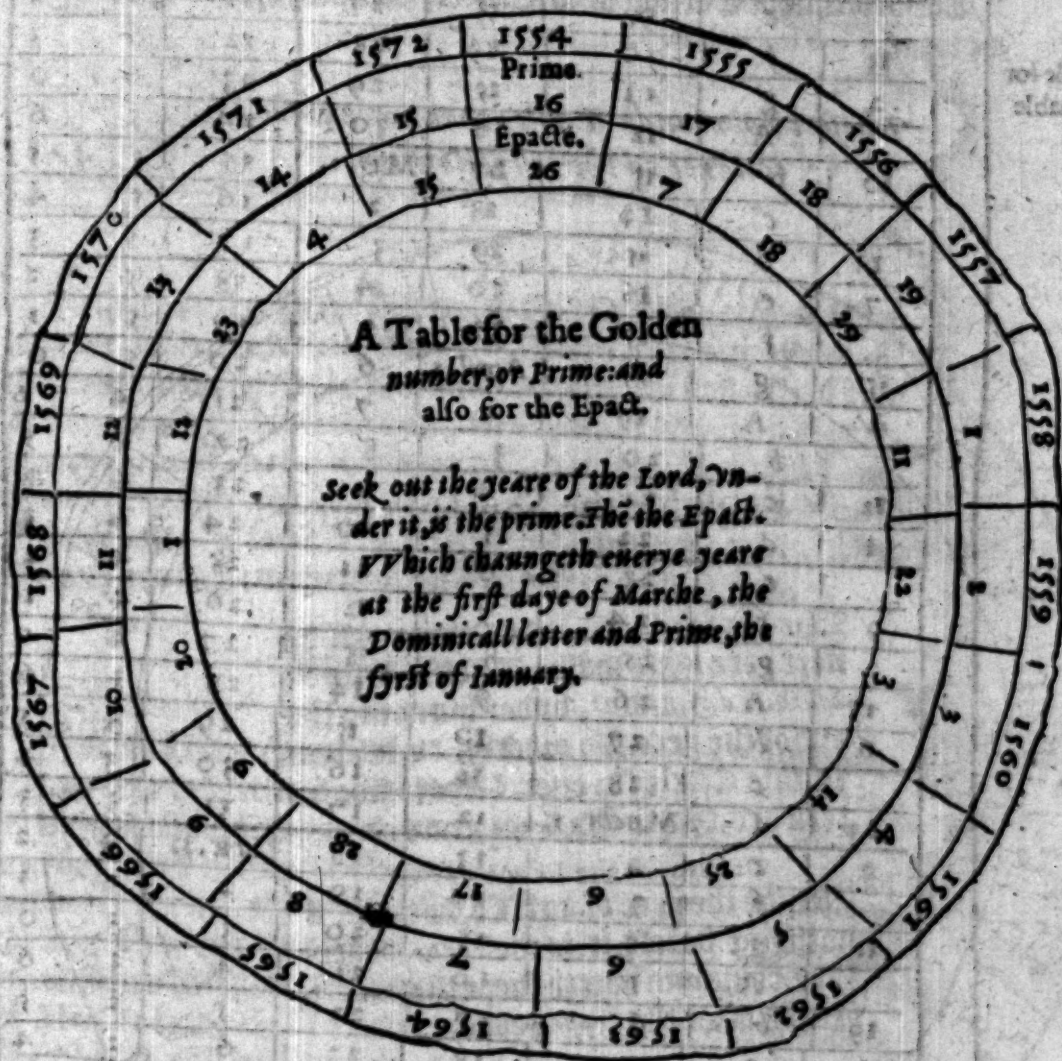
Cutting, Shaving, Clipping, in the wane causeth baldnesse:  
what is then cut, groweth little. *Caluitium prohibet oleum Tartari.*

The best time of Cutting is in Cancer, Scorpio, or Pisces, in  
the wane.

These two rounde Tables that nowe ensue,  
conduce to the rest following



*When yee haue gone rounde about the yeares,  
of these two Tables, begin againe.*



A table for  
mouecable  
feasts.

The print.	The sondayes letter.	The first Lent son. daye.	Easter daye.	Roga- tion.	whitson- tide.	Between whitson. & midso.
16		Februarie.	Marche.	April.	Maye.	wk. dates
5	d	8	22	26	10	6 3
	e	9	23	27	11	6 2
13	f	10	24	28	12	6 1
2	g	11	25	29	13	6 0
	A	12	26	30	14	5 6
10	b	13	27	May. 1.	15	5 5
	c	14	28	2	16	5 4
13	d	15	29	3	17	5 3
7	e	16	30	4	18	5 2
	f	17	31	5	19	5 1
15	g	18	April. 1	6	20	5 0
4	A	19	2	7	21	4 6
	b	20	3	8	22	4 5
12	c	21	4	9	23	4 4
1	d	22	5	10	24	4 3
	e	23	6	11	25	4 2
9	f	24	7	12	26	4 1
	g	25	8	13	27	4 0
17	A	26	9	14	28	3 6
6	b	27	10	15	29	3 5
	c	28	11	16	30	3 4
14	d	Marche. 1.	12	17	31	3 3
3	e	2	13	18	June. 1.	3 2
	f	3	14	19	2	3 1
11	g	4	15	20	3	3 0
	A	5	16	21	4	2 6
19	b	6	17	22	5	2 5
8	c	7	18	23	6	2 4
	d	8	19	24	7	2 3
	e	9	20	25	8	2 2
	f	10	21	26	9	2 1
	g	11	22	27	10	2 0
	A	12	23	28	11	1 6
	b	13	24	29	12	1 5
	c	14	25	30	13	1 4



The vse of this Table appoyned for the  
moueable feasts.



This Table conteyneth in the first title the Prime: in the seconde, the Dominicall letter: in the thirde, Lent: in the fourth, Easter day: in the fifth, Rogation day: in the sixt, VVhitsonday: in the seuenth, how many weekes and dayes are betweine VVhitsonday and Midsommer.

Which all appeare by their titles.

We shall consider by the title round Table before put forth, what number the Prime is that yeare, whereof wee require to knowe all these aforesayd: and seeke that numbze vnder the first title of this Table ensuing. Then seeke vnder the second the Dominical letter, next after the Prime for that yeare: which title ensueth the Prime. Directly agaynst the same Dominicall letter, towarde your right hand, in the same line, wee shall finde vnder the titles, what Moneth and day, euery one of these aforesayd shall happen.

### Ensampler.

I would knowe this yeare of our Lorde 1555. these moueable feastes: the first Lent sonday, Easter day, Rogation dayes, Whitsonday, and how many weekes betwixt Whitsonday and Midsommer day. First I finde the Prime this yeare 17. which 17. I looke out vnder the title of Prime in the Table before. Then I seeke in the next order, and after the Prime, for the Dominicall letter that yeare. Now in right order, according to the title, I finde the third of Marche to bee the first Lent sonday, the 14. of Aprill Easter day: the 19. of May Rogation: the 2. of Iune Whitsonday: and 3. weekes and 1. daye betwixt Whitsonday and Midsommer day. Thus for euer.

Howe

# Profitable Rules.

How to know the age of the Moone:  
then the change, and quarter  
for euer.

By the Prime  
the change is  
knowne, but  
vncertainly:  
therefore here  
omitted.



First learne the Epact (as I haue instructed) for that  
yeare yee seek to know the age of the Moone, then  
recke how many dayes are past of the moneth, which  
day yee desire to know the age. Put that number to  
the Epact. Then begin at March, and reckon for  
euery moneth from him orderly one, vntill your sayd day, inclu-  
ding both the moneth of March, and also the moneth of your sayd  
day. Adde all these dayes vnto your former number, putting a-  
way as many thirtie dayes as ye finde. The rest is the age of the  
Moone. The Age found, the change is knowne. If yee adde  
seuen dayes to the change, yee haue the first quarter: then seuen  
dayes, and somewhat more, betwixt the full: and so to it adding  
seuen and more, bringeth the last quarter thus, by seuen vnto the  
newe Moone.

## Ensamble.

In anno Bissex-  
tilli vnum adde

The tenth day of Ianuarie, the yeare then being M.D.L.V.  
I desire the age of the Moone, I finde the Epact vntill March  
ensuing to be twentie sixe, that adde vnto ten, maketh thirtie sixe,  
then eleuen for the monethes from March to Ianuarie, including  
both monethes, bringing fortie seuen now thirtie pulled away, lea-  
ueth seenteene the age of the Moone.

Now ensue the perfect Tables, declaring the true houre  
and minute of ebbing and flowing in most  
coasts of England.

Quinn South- ampton. Ports- mouth	Redban Aberdeen.	Graues ende.	Düdec. S And.	Age of the Moon	London Timot Merle pole.	Ber- wyke.	Erith. Lyesh. Dübar.	Falmot
South.	S b w.	S S w.	S w b S.		S w.	S w b w	w S w	w b S.
H. M.	H. M.	H. M.	H. M.		H. M.	H. M.	H. M.	H. M.
12	48 1	33 2	18 3	1	3	48 4	33 5	18 6
1	36 2	21 3	6 3	2	4	36 5	21 6	6 6
2	24 3	9 3	54 4	3	5	24 6	9 6	54 7
3	12 3	57 4	42 5	4	6	12 6	57 7	42 8
4	0 4	45 5	30 6	5	7	0 7	46 8	30 9
4	48 5	33 6	18 7	6	7	48 8	33 9	18 10
5	36 6	21 7	6 7	7	8	36 9	21 10	6 10
6	24 7	9 7	54 8	8	9	24 10	9 10	54 11
7	12 7	57 8	42 9	9	10	12 10	57 11	42 12
8	0 8	45 9	30 10	10	11	0 11	45 12	30 1
8	48 9	33 10	18 11	11	11	48 12	33 1	18 2
9	36 10	21 11	6 11	12	12	36 1	21 2	6 2
10	24 11	9 11	54 12	13	1	24 2	9 2	54 3
11	12 11	57 12	42 1	14	2	12 2	57 3	42 4
12	0 12	45 1	30 2	15	3	0 3	45 4	30 5
12	48 1	33 2	18 3	16	3	48 4	33 5	18 6
1	36 2	21 3	6 3	17	4	36 5	21 6	6 6
2	24 3	9 3	54 4	18	5	24 6	9 6	54 7
3	12 3	57 4	42 5	19	6	12 6	57 7	42 8
4	0 4	45 5	30 6	20	7	0 7	45 8	30 9
4	48 5	33 6	18 7	21	7	48 8	33 9	18 10
5	36 6	21 7	6 7	22	8	36 9	21 10	6 10
6	24 7	9 7	54 8	23	9	24 10	9 10	54 11
7	12 7	57 8	42 9	24	10	12 10	57 11	42 12
8	0 8	45 9	30 10	25	11	0 11	45 12	30 1
8	48 9	33 10	18 11	26	11	48 12	33 1	18 2
9	36 10	21 11	6 11	27	12	36 1	21 2	6 2
10	24 11	9 11	54 12	28	1	24 2	9 2	54 3
11	12 11	57 12	42 1	29	2	12 2	57 3	42 4
12	0 12	45 1	30 2	30	3	0 3	45 4	30 5
North.	N b E	N n E	N e b N		N E	N e b E	E n E	E b N.

The first table for the tides.



# Profitable Rules

Foy Lin. Hüter.		Milfo. Bridge.	Portl. Peter.	Age of the Moone.	Orkn. Pole.	Diep. Lux.	Eoloig. Douer.	Calice.
weimot.	Briffo.	water.	porie.		Ors	Les	Harwick	
Dertm.					wel.	noys.	Yarmot.	
Plimot.								
East.	E b S.	E s E	S e b E		S E	S e b S	S s E	S b E
H. M.	H. M.	H. M.	H. M.	)	H. M.	H. M.	H. M.	H. M.
6 48	7 33	8 18	9 3	1	9 48	10 33	11 13	12 3
7 36	8 21	9 6	9 51	2	10 36	11 21	12 6	12 51
8 24	9 9	9 54	10 39	3	11 24	12 9	12 54	1 39
9 12	9 57	10 42	11 27	4	12 12	12 57	1 42	2 27
10 0	10 45	11 30	12 15	5	1 0	1 45	2 30	3 15
10 48	11 33	12 18	1 3	6	1 48	2 33	3 18	4 3
11 36	12 21	1 6	1 51	7	2 36	3 21	4 6	5 51
12 24	1 9	1 54	2 39	8	3 24	4 9	4 54	5 39
1 12	1 57	2 42	3 27	9	4 12	4 57	5 42	6 27
2 0	2 45	3 30	4 15	10	5 0	5 45	6 30	7 15
2 48	3 33	4 18	5 3	11	5 48	6 33	7 18	8 3
3 36	4 21	5 6	5 51	12	6 36	7 21	8 6	8 51
4 24	5 9	5 54	6 39	13	7 24	8 9	8 54	9 39
5 12	5 57	6 42	7 27	14	8 12	8 57	9 42	10 27
6 0	6 45	7 30	8 15	15	9 0	9 45	10 30	11 15
6 48	7 33	8 18	9 3	16	9 48	10 33	11 18	12 3
7 36	8 21	9 6	9 51	17	10 36	11 21	12 6	12 51
8 24	9 9	9 54	10 39	18	11 24	12 9	12 54	1 39
9 12	9 57	10 42	11 27	19	12 12	12 57	1 42	2 27
10 0	10 45	11 30	12 15	20	1 0	1 45	2 30	3 15
10 48	11 33	12 18	1 3	21	1 48	2 33	3 18	4 3
11 36	12 21	1 6	1 51	22	2 36	3 21	4 6	5 51
12 24	1 9	1 54	2 39	23	3 24	4 9	4 54	5 39
1 12	1 57	2 42	3 27	24	4 12	4 57	5 42	6 27
2 0	2 45	3 30	4 15	25	5 0	5 45	6 30	7 15
2 48	3 33	4 18	5 3	26	5 48	6 33	7 18	8 3
3 36	4 21	5 6	5 51	27	6 36	7 21	8 6	8 51
4 24	5 9	5 54	6 39	28	7 24	8 9	8 54	9 39
5 12	5 57	6 42	7 27	29	8 12	8 57	9 42	10 27
6 0	6 45	7 30	8 15	30	9 0	9 45	10 30	11 15
V Vest.	w b n	w n w	n w b w	)	n w	n w b n	n n w	n b w

he second  
ble for the  
les.

*The use of these Tables.*

When you will know the full Sea, seeke out the name Of ebbing and flowing. of the place, where you desire the full water, in the head of the tables: Or learne the pointes of the compass there noted: Or if you like, know of some Particular what Moone maketh a full sea there: a South West or South Moone &c. Then the age of the Moone founde vnder the place or point of the compasse, sheweth in right order the houre and minute of the full water. The ebbe then is manifest.

*Ensample.*

I desire to know the full water at London bridge, the yeare of our Lorde 1555. the first day of February. I finde by rules before put forth, the 6. day of February the yeare aforesayde, the Moone to be 14. dayes olde. I see also vnder the title where London is S. W. which letters signifie that a South west Moone maketh a full Sea there: and that is at 2. of the clocke, and 12. minutes past. This is well perceaued in the first Table before put forth, if you run down to 14. day of the age of the Moone, vnder London title.

*A Note of the houre of the day and night.*

The ingenious may gather here about the houre of the daye and night, by the Moone: consideration had of the pointes in those Tables of tydes before noted. For the houre is orderly put vnder the point of the compasse.

Euery part or point containing 11. degrees 30. this compass is well figured nere about 1/2 Circle in 1/2 instrument folowing for 1/2 night houre because ye may by it haue a delectable large vse of these tide tables.

How by the first of the tide tables, ye may readily know when the Moone cometh into the South, when shee riseth and setteth: with her continuance on the earth.

Seeke the age of the Moone (as is opened) then resorte to the first tide table, looking out that age there: So vnder the South point in right order the houre appeareth, when she commeth vnto the South. Then hath shee spent halfe that arcke that the Sunne would haue had in that Signe, which pulled away, sheweth the rising: that halfe arcke also added to her comming vnto the South, declareth her going downe. The arcke then that the Sunne would haue had in the Signe is her continuance on the earth.



# Profitable Rules

A Table at all times plainly and briefly declaring the breake of the day: the houre and minute of the Sunne rising: the iust length of the day: the length of the night also: the verie minute of the Sunne setting: and the twilight.

Monethes	Daye.	Break of Sunne the day.	Sunne ysinge.	Length of the day	Length of the night	Sunne setting.	Twy- ghte.	Daye.	Monethes
		H. M.	H. M.	H. M.	H. M.	H. M.	H. M.		
Dec.	10	6 08	11 17	37 16	23 3	49 6	0	10	Dec.
	20	5 58	10 7	40 16	20 3	50 6	2	1	
Janu.	1	5 54	10 8	40 16	20 4	50 6	6	28	
	10	5 44	9 7	49 8	21 15	39 4	16	10	
	20	5 35	8 24	52 15	8 4	26 6	25	1	
Febr.	1	5 25	7 13	54 13	9 34	26 4	45	28	
	10	5 16	6 56	56 10	8 5	24 7	0	10	
	20	5 06	6 36	57 13	7 5	24 7	10	1	
Mar.	1	4 56	6 16	58 11	6 5	24 7	40	28	
	10	4 46	5 56	58 12	5 5	24 8	0	10	
	20	4 36	5 36	57 11	4 5	24 8	20	1	
Apr.	1	4 26	5 16	57 10	3 5	24 8	50	28	
	10	4 16	5 6	57 10	3 5	24 9	20	10	
	20	4 06	4 56	57 9	2 5	24 9	50	1	
Maye	1	3 56	4 46	57 8	1 5	24 10	20	28	
	10	3 46	4 36	57 7	0 5	24 11	50	10	
	20	3 36	4 26	57 6	0 5	24 11	20	1	
June	1	3 26	4 16	57 5	0 5	24 11	50	28	
	10	3 16	4 6	57 4	0 5	24 11	20	10	
	20	3 06	4 0	57 3	0 5	24 11	50	1	
July	1	2 56	3 50	57 2	0 5	24 11	20	28	
	10	2 46	3 40	57 1	0 5	24 11	50	10	
	20	2 36	3 30	57 0	0 5	24 11	20	1	
Aug.	1	2 26	3 20	56 59	0 4	24 11	50	28	
	10	2 16	3 10	56 58	0 4	24 11	20	10	
	20	2 06	3 0	56 57	0 4	24 11	50	1	
Sept.	1	1 56	2 50	56 56	0 3	24 11	20	28	
	10	1 46	2 40	56 55	0 3	24 11	50	10	
	20	1 36	2 30	56 54	0 3	24 11	20	1	
Octo.	1	1 26	2 20	56 53	0 3	24 11	50	28	
	10	1 16	2 10	56 52	0 3	24 11	20	10	
	20	1 06	2 0	56 51	0 3	24 11	50	1	
Nov.	1	1 0	1 50	56 50	0 3	24 11	20	28	
	10	12 50	1 40	56 49	0 3	24 11	50	10	
	20	12 40	1 30	56 48	0 3	24 11	20	1	
Dec.	1	12 30	1 20	56 47	0 3	24 11	50	28	
	10	12 20	1 10	56 46	0 3	24 11	20	10	
	20	12 10	1 0	56 45	0 3	24 11	50	1	

## The vse of this table.

Consider the Moneth and day that ye require any of the tofore said: and seke in this Table that same under the title: proceede in right order, so ye have your purpose. If the very day be not founde, take the nearest of your table. Or by proportion the truth is given: which all by Example following shall plainly be declared.

Minutis to be added to the Length



## Ensample.

The first day of Ianuarie, I desire all the aforesayd: that is, the breake of the day: the verie minute of the Sunne rising, the length of the day, and also of the night: the Sunne going downe, and the twylight. I finde on the right hande of Ianuarie these numbers running downe. 1, 10, 20, which declare the first day, the tenth day, and twentieth of that Moneth. Now to my purpose. I requite the breake of the day, &c. The first of Ianuarie in the Table, under the title, on the right hande of this figure 1, I see 5 houres, and 54 minutes, that is 6 of the clocke wanting 6 minutes. The rising of the Sunne in that order, is full at 8, as this figure 8 there declarerh under that title in the rowe. The length of the day, 8 houres: the length of the night, 16 houres: the Sunne setting is at 4: the twylight at 6 and 6 minutes. Euen thus for the tenth day, and also for the twentieth of that moneth, in the rowes according to their titles in the head of my Tables.

How to worke by proportion, when the day is not found.

I woulde know all the aforesaid: the first day of Ianuarie. I sake for ensample the breake of the day. Remember the first day of Ianuarie, I did finde the breake to be at 5 of the clocke and 54 minutes: and the tenth day I may finde the breake of the day to be at 5 and 44 minutes, that is 10 minutes lesse. I see now 10 daies do giue me 10 minutes lesse: I say therefore (by proportion) the fifth day must giue 5 minutes lesse then 5 houres 54 minutes: which is 5 houres, 49 minutes my request. Thus for all the other titles.

The houre of the night by the Moone, is otherwise found: then before, and that diuersly.

The houre of her rising knowne, as is opened, and a marke then made where the shadowerh, in any true fixed or moueable Sundiall, the houres and minutes from that marke all the night after are to bee added to her rising. If more then 12 surmount, onely that aboue 12 shewerh the true houre and minute. If at the rising she may not be seene, then by the Sunne rising, in that very Signe (with the help of this Almanack) you may perceiue what houre she would note at her rising. Therefore from that marke, count.

How by the Moone the night houre is found.

# Profitable rules

An other way.

**W**hen the Moone is at the full, looke what houre her shadowe sheweth in any Diall, that is the houre of the night. After she is past the full 28. houres, ye must adde one houre: But afore the full, pull one from that ye finde in the Diall. Iftwise 28, two houres, &c. so haue ye the houre of the night.

How the houre of the day, by Right shadow, that is, by any thing directly standing vp, is knowne: and by Squire shadow also.



Itt is becometh you to haue a Staffe, or any other thing diuided in 12 equal parts. When ye list to haue the houre, set vp directly your diuided Staffe, on a plaine leuel ground, or bord, &c. Note the last length of the shadow, what parts it containeth. Catch those enter your moneth in the peculiar Kalender following: beholding diligently vnder the name of the moneth, the small entlosed Tables: considering well, which of those smal Tables are nearest vnto your day: and that iudge by the signe, or day there noted. That table serueth your purpose: where you must looke out the partes of the shadow afore found, or heare vnto it: vnder or ouer the which the houre is set, before or after none. Note the two prickes there, signifie halfe a part more then is noted: one pricke, halfe a part lesse. Here it is also to be noted, that euery table hath within, two rowes of figures: the vpper is for the Staffe, the other for the Squire shadow. And whatsoeuer is before said of the one, that same is meant here of the other, sauing of the composition.

The Squire must be diuided from the inward angle to the ende of one side, in 12. equall partes: euen so from that angle the other side into 24. like partes, as this figure sheweth.

These to the w. tie suffice.

The composition of an Instrument for the houre of the night: which is also a perfect Diall for the day, and excellent for the Mariner.

**T**he taking of an Altitude supposen, I coulde exactly in few, (or that without an Instrument) satisfie. If or want of that knowledge, make vpon a plaine board, or rather fine plate, a Circle: the bigger the better: part it into 560 portions, thus.

The



The Circle made deuide it in 6. not mouing the compasse: then euery of them in 6. and each of those last in 10. so haue you 360. partes. Then Character it, beginning at the North thus 10 20. 30. &c. (as in the figure) going toward the East, and ending at the North with 360. Now lay a ruler on the Centre, such with some diuisions, drawing thow to the extreames of the Circle a line. Then crosse that with another. These two must diuide your Circle in 4. equal parts: which lines shew the very East, West, North and South, when by a Meridian or Square dyall, with a needle rectified, they are placed.

Now to the end, let a smal straight wyre, a foote or more long with a Plane in the top, plum by right in the Centre: and there fasten it.

Thus this instrument is finished, to be fixed about your house, equidistant or leuel with the Horizon: hauing a needle if ye list, in it, truly to place it, when and where you will.

That it may be also a Diall for the day, you must pull straight lines from y<sup>e</sup> extremity of your circle outward, to euery fifteenth part: decking them with Characters conveniently as ys see the figure, your Rule keeping the Centre. Thus when the Sun shineth, the shadow of the wyre sheweth the true houre: the Plane, the Windes &c. being truly placed, well placed, & reared as followeth. The points of the compasse are drawn within the Circle, & about the Centre, euery point containyng 11 degrees and a halfe. The Instrument as you see is enclosed round about with a square: for the Marpners ayde.

Truly few words cannot expresse the excellencie of this square for their vse: No otherwise to be opened, then learned Gemma hath inuented and plainly declared: here omitted of me, not fully occasioned now to wyte that way. I haue appoynted a meetter place for this and like matter. In the meane tyme I am ready in word and deede, to further the desirefull in this or any other.



# Profitable rules

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These to the w. tie suffice.

The composition of an Instrument for the houre of the night: which is also a perfect Diall for the day, and excellent for the Mariner.

**T**he taking of an Altitude supposed, I could exactly in few, (that without an Instrument) satisfie. If for want of that knowledge, make vpon a plaine board, or rather fine plate, a Circle: the bigger the better: part it into 560 portions, thus.

The

The Circle made deuide it in 6. not mouing the compass: then euery of them in 6. and each of those last in 10. so haue you 360. partes. Then Character it, beginning at the North thus 10 20. 30. &c. (as in the figure) going toward the East, and ending at the North with 360. Now lay a ruler on the Centre, even with some diuisions, drawing thow to the extreames of the Circle a line. Then crosse that with another. These two must diuide your Circle in 4. equal parts: which lines shew the very East, West, North and South, when by a Meridian or square dyall, with a needle rectified, they are placed.

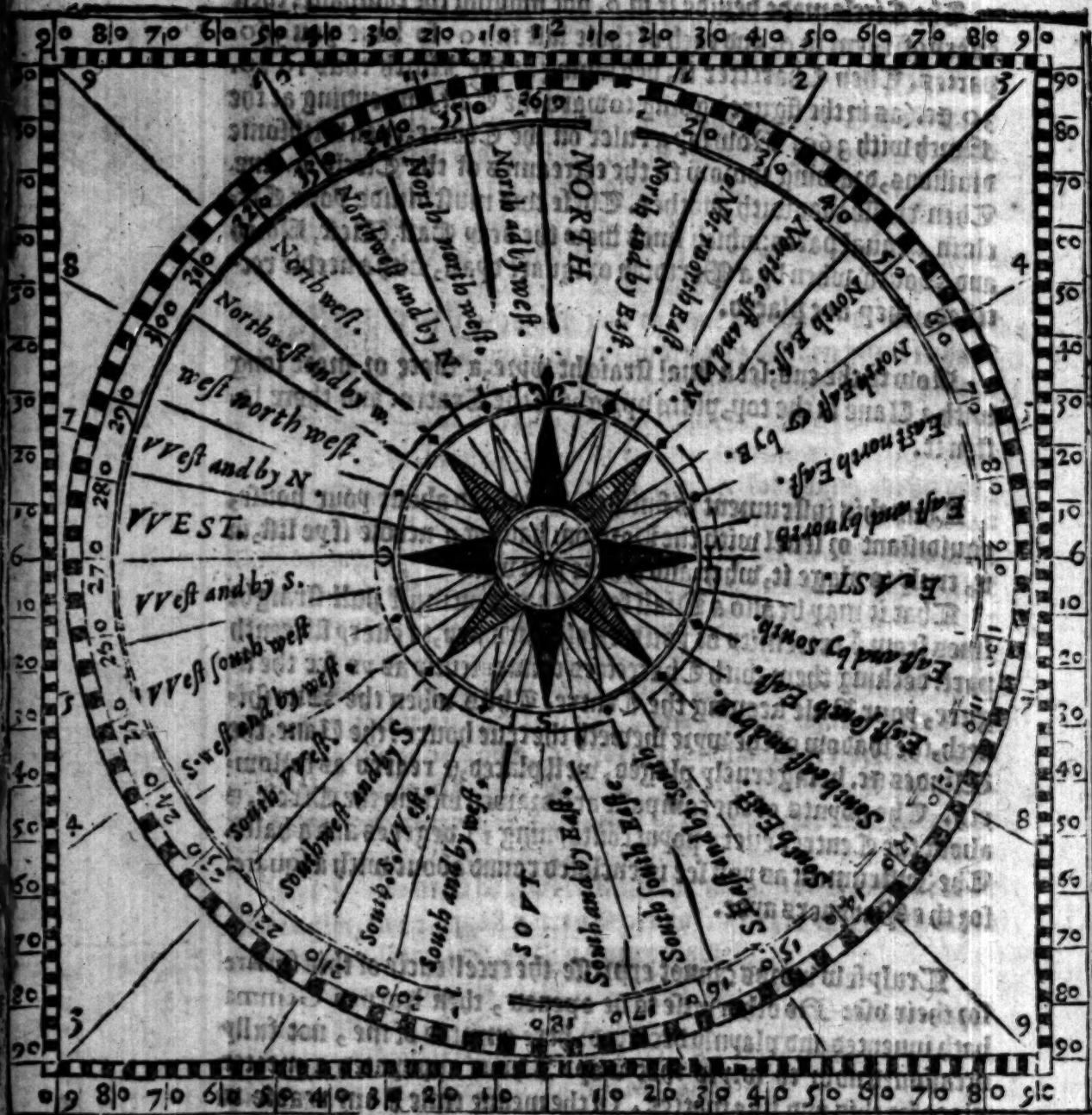
Now to the end, let a smal straight wyre, a foote or more long with a Plane in the top, plum vpright in the Centre: and there fasten it.

Thus this instrument is finished, to be fixed about your house, equidistant or leuel with the Horizon: hauing a needle if ye list, in it, truly to place it, when and where you will.

That it may be also a Diall for the day, you must pull straight lines from y<sup>e</sup> extremity of your circle outward, to euery fiftenth part: decking them with Characters conveniently as ye see the figure, your Rule keeping the Centre. Thus when the Sun shineth, the shadow of the wyre sheweth the true houre: the Plane, the Windes &c. being truly placed, well placed, & reared as followeth. The poynts of the compass are drawn within the Circle, & about the Centre, euery poynt contayning 11 degrees and a halfe. The Instrument as you see is enclosed round about with a square: for the Harpners ayde.

Truly few words cannot expresse the excellencie of this square for their vse: No otherwise to be opened, then learned Gemma hath inuented and playnly declared: here omitted of me, not fully occasioned now to wyte that way. I haue appoynted a meete place for this and like matter. In the meane tyme I am ready in word and deede, to further the desirefull in this or any other.





Beholde this instrument for Navigation most commodious,  
the vse of which is here onely put forth according  
to my inuention.



The right rearing and placing of the Diall  
tofore mentioned.

**I**f by handsomly your Instrument or Diall towarde the North in some meete place, the side of a Squire lying on it, untill the plummet and line, centred in the extreme upper part of the other side of your Squire like long, cut all that Squire side which lieth on your Instrument, the first part onely except: Then moue your Instrument, hither and thither, this or that way, untill the shadow of the wire fall vpon the houre of the day, keeping diligently your height before. Your Diall thus fixed, declareth all the yeare long, the exact houre and parts thereof. No Diall in truch excelleth this. Haue in remembrance, that this Instrument must lie leuel, nothing at all reared, for the houre of the night by starre.

In winter the  
contrarie super-  
ficies or Plain,  
sheweth the  
day houre fro  
to  $\gamma$

To get the exact houre by two Starres of the first light, with an Instrument or Circle, tofore diuided, first of me inuented, calculated and practised.



**T**he Instrument equidistantly set and placed, as is declared in the composition, ye ought to lay the edge of a ruler vnto  $\gamma$  wire, the other neather end touching  $\gamma$  instrument, mouing here & there still touching the wire, vntil either starre doth offer it selfe with that edge, and that by the iudgement of the

Fit filo aut digito, absque regula exactissimo.

eye. Then put downe discretely your ruler (euer touching  $\gamma$  wire) the hinder ende not moued, obseruing how many partes are cut from the North, to the edge of the Ruler. Enter with them the peculiar Kalender following: seeking out your moneth, placed in the middelt of euerie Table: then the day of that moneth must be there found.

Note that euerie table hath on the sides, the dayes thus ordered 1. 5. 10. 15. 20. 25. 30. Know, the order or rowe of figures which is right against, or nearest your day, serueth the turne. The number or parts before cut by the Ruler, and now found in the rowe of your table, sheweth the precise houre. If it be too little, that houre ouer the head or vnder is not yet come, if contrarie, it is past.

## Profitable rules.

How these two bright starres, being of the first light, are found: the one called Aldbaran or oculus Tauri, the other Alramech.

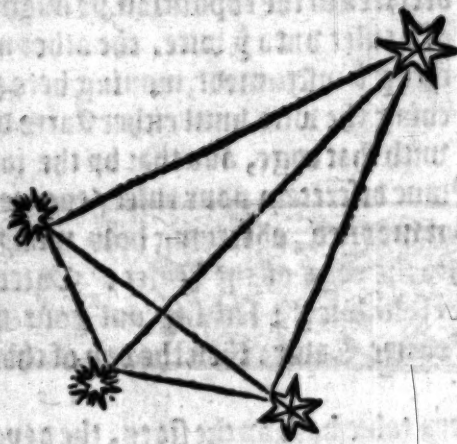
By what  
meanes these  
Starres are  
known.

**T**he best way is thus: The Moneth and day knowen with the true houre of the night, enter your Table considering that moneth & day, obserue what parts belongeth there to that starre and houre. Then resorte to your Instrumente, laying the edge of your ruler, as many partes from the North Eastward, circumspectly lifting by the edge close by the wyze, so the sayde star shyneth euen with that edge.

Or thus grossly.

Another way  
to finde them.

**O**culus Tauri is euer a meete rod and a halfe to the eye vnder the seuen starres, and somewhat North of them in the rising: Alramech is contrary to him placed, accompanied with three litle dimme starres, a rod from him by the iudgemente of the sight: in the foyme of a Triangle, thus.



Beholde this figure: the great Starre doth represent Alramech: the other three the Triangle, which is placed alwayes with him, but commonly there doth appeare but one Starre of the Triangle.

NOW

**NOW ENSVETH THE**  
needfull, necessarie, peculiar Kalendar  
tofore mencioned: with instruments  
belonging thereto. The composition  
and appliance of the sayd Tables, with  
the pleasant vse of them, are before suf-  
ficiently opened: therefore further  
declaration here, might seeme  
superfluous.

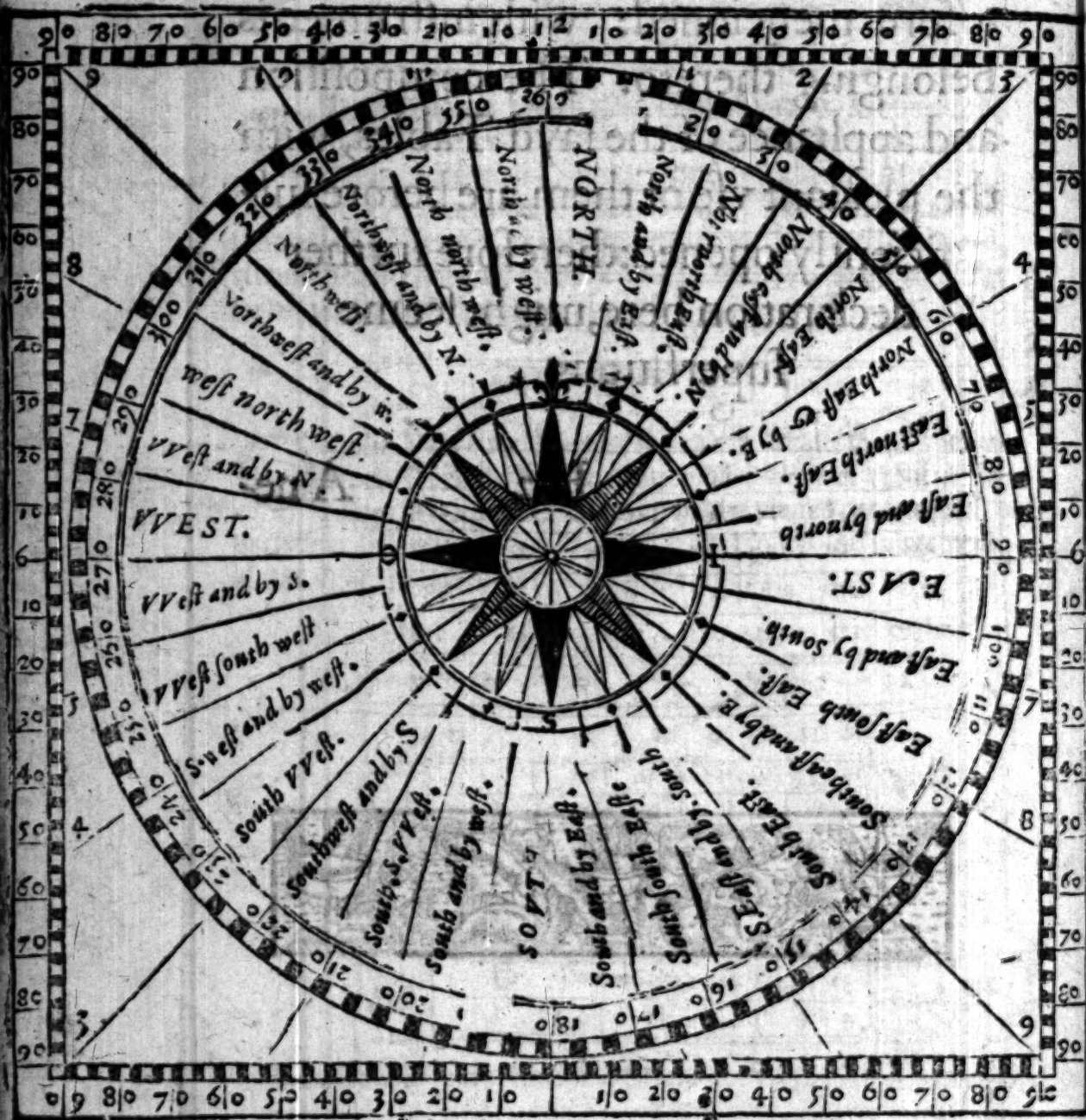
H 2

A ne





A necessarie Instrument, to find exactly the houre of the day and  
 night diuerſe wayes, with the helpe of this  
 peculiar Kalender



# The Peculiar Kalender.

	5	6	7	8	9	10	11	12
1	108	113	143	165	190	213	59	79
5	112	129	150	172	197	220	63	74
10	113	136	158	183	206	227	68	78
15	123	144	166	192	214	233	71	81
20	130	151	173	199	220	239	75	86
25	137	158	183	207	228	244	79	90
30	144	165	191	213	233	249	82	91

January hath xxxj. dayes.

81	93	105	121	143	168	196	
86	96	110	127	151	177	205	
89	101	116	135	160	189	214	
93	105	122	143	169	198	213	
98	111	128	152	179	207	230	
10	116	135	159	190	216	236	
190	121	144	168	193	222	242	
1	2	3	4	5	6	7	

From Evening to midnig.

Oculus Tauri.

1  
5  
10  
15  
20  
25  
30

Alramech.

Alramech.

10	12	11	10	9	8	7	H
Staffe	26	39	49	83	550	0	
Squire	4	14	3	2	0	10	
H	0	1	2	3	4	5	

shad.

shad.

20	12	11	10	9	8	7	H
Staffe	32	34	42	63	209	0	
Squire	4	14	3	2	1	0	
H	0	1	2	3	4	5	

shad.

shad.

10 gr

30	12	11	10	9	8	7	H
Staffe	27	29	35	119	0		
Squire	5	5	4	3	1		
H	0	1	2	3	4	5	

shad.

shad.

H iiij.

For the night.

From midnig to day

For the day.



# The Peculiar Kaleider.

Oculus  
Taxi.

Alramech.

From evening to midnight.

For the night.

From midnight unto day

1  
5  
10  
15  
20  
25  
30

February hath xxviii. dayes.

Alramech.]

	6	7	8	9	10	11	12		
1	169	194	216	62	73	83	95		
5	174	199	222	64	75	85	98		
10	184	207	228	68	79	70	102		
15	191	214	234	71	81	94	106		
20	198	220	233	75	86	98	111		
25	205	226	243	78	88	110	116		
30									

	108	124	146	172	201	225		
1	111	129	153	180	207	231		
5	117	136	126	190	216	227		
10	122	144	169	153	223	213		
15	128	152	278	206	235	248		
20	134	159	188	214	236	252		
25								
30								

	1	2	3	4	5	6		
--	---	---	---	---	---	---	--	--

	12	11	10	9	8	7	H		
8	23	25	30	42	80	6	6		
Staffe	6	6	5	3	2	0			
Squire	0	1	2	3	4	5			
H									

	12	11	10	9	8	7	H		
13	20	21	25	54	61	226			
Staffe	7	7	6	4	2	1			
Squire	0	1	2	3	4	5			
H									

	12	11	10	9	8	7	H		
18	17	18	22	29	45	112			
Staffe	8	8	6	5	3	1			
Squire									
H									

gr. X



# The Peculiar Kalendar.

30

	7	8	9	10	11	12			
1	50	70	81	93	15	120			
5	62	74	84	95	108	125			
10	65	76	87	97	113	131			
15	69	80	91	103	118	138			
20	72	83	94	107	123	146			
25	75	86	98	112	129	153			
30	80	90	102	117	136	161			

From evening to midnight.

Alramech.

Marche hath xxxi. dayes.

142	168	196	222	241			
47	173	201	227	245			
155	183	210	232	250			
63	192	218	238	255			
71	200	225	243	259			
180	208	231	249	262			
191	26	237	254	267			

From midnight unto day.

1  
5  
10  
15  
20  
25  
3

Alramech.

12	11	10	9	8	7		H
15	16	19	23	37	74		(bad.)
9	9	18	6	4	12		(bad.)
1	1	2	3	4	5		

12	11	10	9	8	7	6	H
13	14	16	21	30	54	121	(bad.)
11	10	9	17	15	12	1	(bad.)
H	0	1	2	3	4	5	6

12	11	10	9	8	7	6	H
11	12	14	18	26	43	112	(bad.)
12	12	10	18	5	3	11	(bad.)
H	0	1	2	3	4	5	6

For the night.

For the day.

10 gr. V

20

# The Peculiar

Alramech.

For the night.

	6	7	8	9	10	11	12
1	92	104	118	138	154		
5	94	107	123	145	171		
10	98	111	129	153	180		
15	101	117	125	150	189		
20	106	122	144	168	198		
25	111	128	152	178	207		
30	117	135	159	189	215		

From evening to midnight.

Apryll hath xxx. dayes.

Alramech.

103	218	230	255				
199	225	244	258				
207	231	248	262				
215	235	253	266				
223	243	257	270				
230	248	262	274				
236	252	266	278				

From midnight to day.

1 2 3 4 5

	12	11	10	9	8	7	6	H
Staffe	0	11	13	16	23	36	76	{ sbad. }
Squire	14	13	11	9	6	4	2	
H	0	1	2	3	4	5	6	

For the day.

	12	11	10	9	8	7	6	H
Staffe	9	9	11	15	21	31	58	267
Squire	16	15	12	9	7	4	2	1
H	0	1	2	3	4	5	6	

gr. 8

	12	11	10	9	8	7	6	5	H
Staffe	8	8	10	14	19	28	49	139	{ sbad. }
Squire	18	17	14	10	7	5	3	1	
H	0	1	2	3	4	5	6	7	

20

	8	9	10	11	12			
1	117	136	160	190	216			
5	120	142	168	196	222			
10	128	152	178	206	230			
15	134	159	188	214	235			
20	143	168	196	222	241			
25	151	177	206	230	248			
30	160	189	215	235	253			

May hath xxxj.

	237	253	267	278			
1	241	256	269	280			
5	247	261	273	285			
10	252	266	278	288			
15	257	270	281	292			
20	262	274	285	296			
25	266	278	288	300			
30							

1      2      3      4      5

For the day.

12 {  
Staffe  
Squire  
H

12 11 10 9 8 7 6 5  
7 8 10 13 17 26 43 100  
20 18 15 11 8 5 3 1  
0 1 2 3 4 5 6 7

12 11 10 9 8 7 6 5 4  
7 7 9 12 17 24 39 82 258 0  
21 19 15 12 8 6 4 2  
0 1 2 3 4 5 6 7 8

12 11 10 9 8 7 6 5  
6 7 9 12 16 23 37 74 565  
22 20 16 12 9 6 4 2  
H 0 1 2 3 4 5 6 7

gr. II



*The peculiar Kalender.*

**Alramech.**

*For the night.*

*From midnight unto day.*

*From eleven to midnight.*

**Alramech.**

June hath xxx. dayes.

1 2 3 4 5

*For the day.*

I { Staffe  
Squire  
H

12 } Squire  
H

23 } Staffe  
} Squire  
H

Spad. T  
Spad. S

} Stad.  
 } Stad.

Stad. }  
Stad. }

ग्र. II

५.५

	8	9	10	11	12			
1	219	239	255	263	280			
5	225	244	259	272	283			
10	233	250	264	275	286			
15	238	254	267	279	290			
20	243	258	271	283	293			
25	249	262	275	226	297			
30	254	267	279	290	300			
Iuly hath xxxj.								
	290	302	83					
	293	304	86					
	267	79	90					
	301	82	93					
	304	86	98					
	308	89	101					
	82	93	106					
	1	2	3	4	5			

For the Night.

From midnigh unto day.

From evening to midnigh.

Alramech.

Alramech.

Oculus Tauri.

	12	11	10	9	8	7	6	5	4	H
3	Staffe	7	7	9	12	16	24	39	82	2580
	Squire	21	19	15	12	8	6	4	3	
	H	0	1	2	3	4	5	6	7	8
	12	11	10	9	8	7	6	5		H
14	Staffe	7	8	10	13	17	26	43	100	
	Squire	20	18	15	11	8	5	3	1	
	H	0	1	2	3	4	5	6	7	
	12	11	10	9	8	7	6	5		H
24	Staffe	8	8	10	14	19	28	49	139	
	Squire	18	17	13	10	7	5	3	1	
	H	0	1	2	3	4	5	6	7	

For the day.

gr. 5

gr. 12

# The peculiar Kalender.

Alramech.

Oculus  
Tauri.

Oculus  
Tauri.

For the night.

From midnight unto day.

From even to midnight.

8 9 10 11 12

1	255	267	279	291	302			
5	259	272	284	294	304			
10	263	275	286	297	79			
15	267	279	290	300	81			
20	270	282	292	303	86			
25	274	285	296	303	88			
30	278	288	299	81	92			

August hath xxxj. dayes.

82	94	107	122	141				1
86	98	111	126	146				5
89	102	116	132	154				10
93	105	119	138	160				15
96	110	125	144	167				20
100	114	130	152	174				25
104	118	136	158	183				30

1 2 3 4 5 6 7 8 9 10 11 12

			12	11	10	9	8	7	6	5	4	3	2	1					
3	{	Staffe	{	9	9	11	15	21	31	58	207	1	{	Shad.	20	{	2	3	4
		Squire		16	15	12	9	7	4	2	0	1		Shad.					
		H		0	1	2	3	4	5	6	7	8		9					
			12	11	10	9	8	7	6	5	4	3	2	1					
14	{	Staffe	{	10	11	13	16	23	38	72	21	1	{	Shad.	20	{	2	3	4
		Squire		14	13	11	9	6	4	2	0	1		Shad.					
		H		0	1	2	3	4	5	6	7	8		9					
			12	11	10	9	8	7	6	5	4	3	2	1					
24	{	Staffe	{	11	12	14	18	20	43	191	1	{	Shad.	20	{	2	3	4	
		Squire		12	12	10	8	5	3	1	0		1						Shad.
		H		0	1	2	3	4	5	6	7		8						9



	7	8	9	10	11	12
1	167	279	290	301	82	93
5	170	281	292	303	85	96
10	273	285	295	307	88	100
15	275	287	293	80	91	107
20	203	291	302	83	94	103
25	284	295	305	87	99	105
30	287	297	80	91	103	117

For the night.

From evening to midnight.

Alramech.

Oculus Tauri.

September hath xxx. dayes.

	1	2	3	4	5	6
105	120	139	161	186	12	171
109	124	144	166	192	22	171
113	129	150	173	199	31	171
117	135	155	180	204	40	171
123	142	162	189	212	50	171
128	149	171	195	219	60	171
134	155	180	204	225	70	171

For the night.

From midnight unto day.

Oculus Tauri.

For the day.

3		12 11 10 9 8 7 6							H	} 20	gr. m <sup>y</sup>
		13 14 16 21 30 54 22									
		11 10 9 7 5 3 0									
		0 1 2 3 4 5 6									
4		12 11 10 9 8 7							H	} 0	gr. m <sup>y</sup>
		15 16 19 24 37 73									
		9 9 8 6 4 2 1									
		0 1 2 3 4 5 6									
4		12 11 10 9 8 7							H	} 10	gr. m <sup>y</sup>
		17 18 22 29 42 112									
		8 8 6 5 3 1 1									

## The Peculiar Calendar.

I  
5  
10  
15  
20  
25  
30

For the day.

12 H 10 9 8 7 H

4 {Staffe  
Squire

20 | 31 | 25 | 34 | 61 | 1206 | 1 |  
7 | 7 | 6 | 4 | 2 | 0 | 1 |

H 0 1 2 3 4 5

12 H 10 9 8 7 H

14 {Staffe  
Squire

23 | 35 | 30 | 42 | 79 | 6896 | 1 |  
6 | 6 | 5 | 3 | 2 | 0 | 1 |

H 0 1 2 3 4 5

12 H 10 9 8 H

24 {Staffe  
Squire

27 | 29 | 35 | 19 | 1 | 1 | 1 | 1 |  
5 | 5 | 4 | 3 | 1 | 1 | 1 | 1 |

H 0 1 2 3 4

{bad.} 20 gr. 10  
{bad.} 0  
{bad.} 10  
{bad.} 10

# The Peculiar Kalender.

34

For the night.

From evening to midnight.

Alramech.

Oculus  
Tauri.

From midnigh to day.

Nouember hath xxx. dayes.

182	205	216	243	257	270	281	292
188	211	231	248	268	273	285	296
196	218	237	252	265	277	288	000
204	225	243	257	269	281	292	000
213	232	248	261	274	285	297	000
220	238	253	266	278	290	127	000
227	244	258	270	282	293	135	000

1 2 3 4 5 6 7 8

1  
5  
10  
15  
20  
25  
30

Oculus  
Tauri.

For the day.

2	Staffe	12	11	10	9	8	H	} 20 gr. m
	Squire	32	34	42	65	219		
	H	0	1	2	3	4		
13	Staffe	12	11	10	9	8	H	} 0
	Squire	36	39	47	83	550		
	H	0	1	2	3	4		
22	Staffe	12	11	10	9		H	} 10 gr. f
	Squire	40	45	57	04			
	H	0	1	2	3			



## The Peculiar Kalendar.

	5	6	7	8	9	10	11	12
1	81	92	105	119	136	158	183	207
5	84	96	109	124	144	166	191	214
10	89	111	115	132	153	175	201	222
15	93	110	120	139	161	186	209	230
20	98	111	127	147	169	195	217	236
25	152	116	133	154	177	202	224	242
30	107	122	141	163	188	211	231	248
December hath xxxi. dayes.								
	228	244	258	271	283	293	305	
	234	249	263	275	286	299	312	324
	240	255	267	279	291	304	316	328
	246	260	272	284	295	308	320	332
	251	264	276	287	299	311	323	335
	256	268	280	291	303	315	327	339
	261	273	285	296	308	320	332	344
	1	2	3	4	5	6	7	

Oculus  
Tauri.

Oculus  
Tauri.

**Alramech.**

For the night.

From midnight unto day.

**For the day**

2 {Staffe { 2 II IO 9 H {bad.} 20 gr. 2  
Squire { 43 47 92 122 | | | | {bad.}

12 {Staffe { 45 49 165 131 | | | | {bad.} 0  
Squire { 3 | 3 | 2 | 2 | | | | {bad.}

22 {Staffe { 43 | 47 | 62 | 122 | | | | {bad.} 10 gr. 2  
Squire { 3 | 3 | 2 | 2 | | | | {bad.}

31 {Staffe { 40 45 47 104 | | | | {bad.} 20  
Squire { 3 | 3 | 2 | 1 | | | | {bad.}

H 0 I 2 3

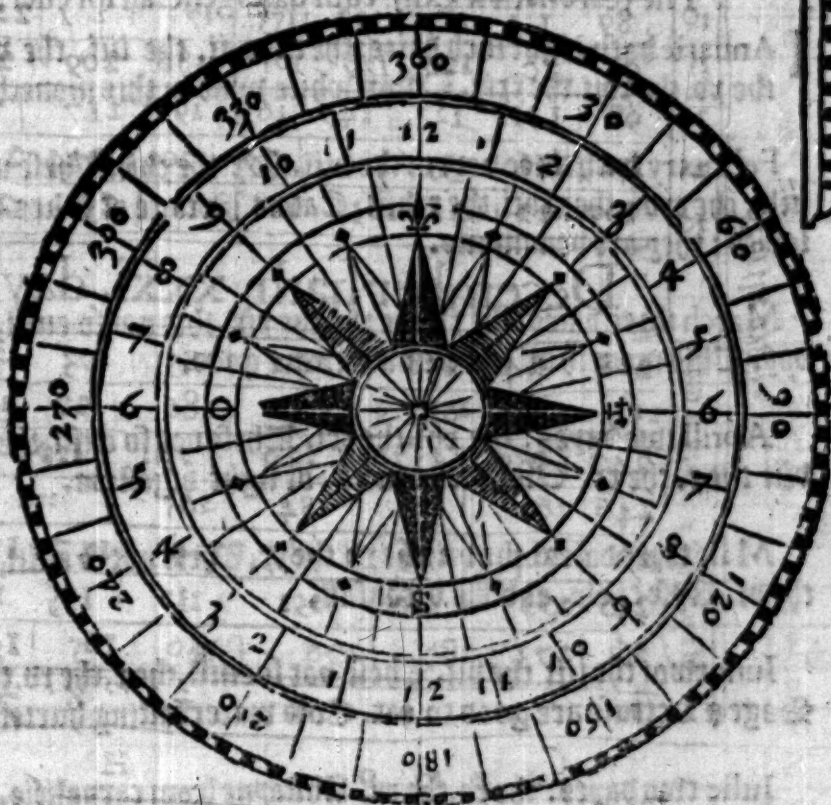
# The generall Kalendar.

35

1
2
3
4
5
6
7
8
9
10
11
12

1
2
3
4
5
6
7
8
9
10
11
12

North



West

East

South

Thus endeth the Peculiar Kalendar, very commodious for the day and night houre. I here adioyned the Instrumēt without the Square, which may suffice for the whole vse of þe toforesayd Kalendar, with the helpe of the Squire and Staffe.

I shal not here omitte a Kalendar generall diuided in two parts, wherof the first containeth sixe moneths, from Ianuary to Iune:

The

The second, other fixe moneths, from Iuly to December. In this  
Kalendar are set forth the Feastiuall dayes, the entering of the Sun  
in the Signes celestiaall, the euill daies noted with one prick. For a  
further declaration of those euill dayes: reade this following.

The yeare hath xxxiiij. euill daies generall for euer.

**I** Anuarie hath eight such daies: the i. the ii. the iiii. the v. the x.  
the xv. the xviij. the xxix. Drink white wine in this moneth.

February hath three dayes: the viij. the x. the xvij. These not so e-  
uill, the xxvi. the xxvij. the xxviii. Eat no Potage of Oxes or Pa-  
lowes: they are venomous.

March three daies: the xv. the xvi. the xix. this not so euill, xxviii.  
day. This moneth all sweete meates are good.

Aprill two dayes: the xvi. the xxi. These not so euill, the viij. the  
xiii. the x. the xx. Use hote meates, of light digestion.

Maie three daies: the viij. the xv. the xx. These not so euill, the iiii.  
the vi. Ryse early, and vse breakfast.

Iune two: the iiii. the viij. These not so euill, the x. the xv. the xxii.  
Sage & Lettuse are good to eat. Cold water fasting hurteth not.

Iulie two dayes: the xv. the xx. Abstayne from carnallitie.

August two dayes: the xix. the xx. These not so euill, the i. the  
xxix the xxx. It hurteth not to abstaine from Potage, and all hote  
meats, and drinks of spicerp.

September two dayes: the vi. the viij. These not so euill, the iiii.  
the xiii. the xxi. the xxii. Eate good fruite.

October one day: the vi. These not so euill, the iiii. the xvi. the  
xxiii. Good wine is wholesome this moneth.

November two dayes: the xv. the xix. These not so euill, the v.  
the vi. the xxviii. the xxix. Bleeve not.

December three dayes: the vi. the viij. the ix. These dayes not so  
euill, the xv. the xvij. the xxii. Bleeve not ouer much. Warme not  
thy legges at the fire.

Now



The first part of the generall Kalendar: from Ianuarie to Iune.

Ianuarie.	Februarie.	March.	Dates	April.	May.	Iune.
:A Circūi.	d	d	1	g	bPhi.lac.	e
:b	e Purifi.	e	2	A	c	f
c	f	f	3	b	d	g
:d	g	g	4	c	e	:A
:e	A	A	5	d	f	b
f Epiph.	b	b	6	e	g	c
g	c	c	7	f	:A	:d
A	:d	d	8	g	b	e
b	e ⊙ in X	e	9	A	c	f
:c	:f	f	10	b	d	g
d ⊙ in z	g	g ⊙ in v	11	c ⊙ in x	e	A Barna.
e	A	A Spring.	12	d	f ⊙ in II	b ⊙ in gg
f Hilar.	b	b	13	e	g	c Simer.
g	c Valen.	c	14	f	A	d
:A	d	:d	15	g	:b	:e
b	e	:e	16	:A	c	f
:c	:f	f	17	b	d	g
d	g	g	18	c	e	A
e	A	:A	19	d	f	b
f	b	b	20	e	:g	c
g	c	c	21	:f	A	d
A	d	d	22	g	b	:e
b	e	e	23	A Georg.	c	f
c	f M. sh.	f	24	b	d	g Ioā bap.
d Cō. Pau.	g	g Anun.	25	c Marc.	e	A
e	A	A	26	d	f	b
f	b	b	27	e	g	c
g	c	c	28	f	A	d
:A		d	29	g	b	e Pe. Pa.
b		e	30	A	c	f
c		f	31		d	

# The generall Kalender.

The seconde part of the generall Kalender: from Iulie to December.

Iuly.	August.	Septemb.	Dayes	October.	Novem.	Decem.
g	c Pet. Vin.	f	1	A	d Om. f. i.	f
A	d	g	2	b	e Om. an.	g
b	e	.A	3	.c	f	A
c	f	.b	4	d	g	b
d	g	c	5	e	.A	c
e Dog beg.	A	.d	6	.f	.b	.d Nico.
f	b	.e	7	g	c	.e
g	c	f Na. Ma.	8	A	d	f Co. ma.
A	d	g	9	b	e	.g
b	e	A	10	c	f	A
c	f	b	11	d	g	b
d	g	c	12	e	A	c $\odot$ in $\mathcal{B}$
e	A	d	13	f	b $\odot$ in $\mathcal{X}$	dwynter.
f $\odot$ in $\mathcal{S}$	b $\odot$ in $\mathcal{W}$	e $\odot$ in $\mathcal{L}$	14	g $\odot$ in $\mathcal{M}$	c	e
g	c	f Heruest.	15	A	.d	.f
A	d	g	16	b	e	g
b	e Dog end	A	17	c	f	.A
c	f	b	18	d Luc.	g	b
d	.g	c	19	e	.A	c
.e	.A	d	20	f	b	d
f	b	.e Mathe.	21	g	c	e Tho. ap.
g Ma. mag.	c	f	22	A	d	f
A	d	g	23	b	e	g
b	e Bartho.	A	24	.c	f	A
c Luc. Apo.	f	b	25	d	g	b Na. do.
d	g	c	26	e	A	c Steph.
e	A	d	27	f	b	d lo. ena.
f	b	e	28	g St. Iud.	.c	e Imoce.
g	.c decol. lo.	f Micha.	29	A	.d	f Tho.
A	.d	g	30	b	e Andre.	g
b	e		31	c		A

Lo the bricfe vse of this generall  
Kalendar.



After the Columne where your Moneth is noted in the head, ye shall there finde running downe the columne the Festival daies of that Moneth, the entrie of the Sunne in the Celestiall figures, the euill dayes prickted, &c.

I would haue placed in this Kalendar the Fayres and Termes also: but that can not remain continually true. For those that ensue moueable feasts are moueable, and therefore may haue no certaine place. For the Termes also, note these precepts following. The Fayres shall be declared by two Tables immediately ensuing this Kalendar Generall.

## How to know the Termes.

**K** Now that Easter Terme alwayes beginneth the 18. day after Easter, reckoning Easter day for one: and endeth the Monday next after the Ascension day.

Trinity Terme beginneth the Friday next after Corpus Christi day, and endeth the Wednesday fourtnight after.

Michaelmasse Terme beginneth the 9. or 10. day of October: and endeth the 28. or 29. of Nouember.

Hillarie Terme beginneth the 23. or 24 day of Iauuarie: and endeth the 12. or 13. day of Februarie.

FINIS.



# Generall Faïres.

A Table containing the Moneth, day, and place of the principall Faïres of England, to be augmented at pleasure, in order following.

- Ianuarie.** The sixt day of Ianuary, the fayre is at Bystow, and also at Salisburie. The first of Lent at Exeter.
- Februarie.** The second day at Bathe, at Maidstone. The 14. at Feversham. On Ashwednesday at Lichfield, at Ropstone, at Camworth. The first Monday in Lent, at Ciciter, at Abington. The 24. at Henley vpon Thames, at Teukesburie.
- March.** The 4. Sunday in Lent, at Stamford, at Sudburie. The fift Sunday, at Grantam. The Monday before our Lady day, at Salisburie. Palme euen, at Wilsbitch. The 13. at Wit. The 25. at Northampton, at great Chare, at Maulden.
- Aprill.** The 5. day at Wallingford. The 7. at Darby. The 9. at Bickelsworth, at Billingsworth. At Calam the Monday after. The Sunday after Easter, at Louth. The 23. at Charing, at Ipswich, at Amtill, at Hinigam, at Gilsford. The 25. at Darbie. The 26. at Centerden.
- May.** The 1. day, at Stow the old, at Reading, at Maidstone, at Leicester, at Chensford. The 8. day at Beverley. Ascension day, at Birmingham, at S. Edes, at Bishops Statford. Whitsunday, at Kingstone vpon Thames. Trinitie Sunday, at Rowell. At Cranebrooke the 19. day. The 27. day at Lenham.
- Iune.** On Corpus Christi day, at Couentry, S. Edes, at Bishop Stanford, at Rolfe. The 9. at Maidstone. The 11. at Okingam. The 23. at Shrowlsburie, at S. Albones. The 24. at Cambridge, at Gloucester, at Lincolne, at Windsor, at Colchester. The 29. at Wollerhampton, at Peterborough. The 17. at Folkstone. The 24. at Harisam. The 8. at Peterborne.

A Table containing the Moneth, day, and Place  
of the principall Faïres of England : to be  
augmented at pleasure, in order  
following.

**T**he 11 day, Horse faire at Partney, at Nabor, at Felix. The 12 Iulie.  
day at Lid. The 15 at Pinchbacke. The 17. at Winchcome.  
The 20 at Uxbridge, at Catesby. The 22 at Parleborowe, at  
Winchester, at Colchester, at Eetburie. The 25 at Bristowe, at  
Douer, at Chisbam, at Ipswich, at Northampton, at Darbie,  
at S. James by London, at Reading, at Louth, at Palmshurie.

The 1 day at Feuersame, at Dunstable, at S. Eoes, at Bud- August.  
forth, at Parram Church, at Wilsbich. The 9 at Rumney. The 10  
at Bedford, at Fernam, at Serodes, at B'ackamore, S. Lau, at  
Waltō. The 24 at London, at Teukesburie, at Sudburie, at Nor-  
wich, at Northallerton, at Douer, at Ric. The 28 at Ashford.

The 8 day at Cambridge, at Sturbidge, at London in South. September.  
warke, at Smide, at Reculuer, at Partney thre Lady dayes. The  
14 at Maltam Abbey, at Wotton vnder hedge, at Spalding. The  
21 at Croydon, at Holden in Holbernesse, at S. Edmondsburie, at  
S. Iues, at Walpy Lanam, at Wiltemall, at Sittingborow, at  
Douer, at Estry. The 29 day at Canterburie.

The 6 day, at S. Sithes besides Norwich. The 13 at Graues October.  
end, at Windsoze, at Parchfield. The 18 at Ely, at Stanton, at  
Charing. The 23 at Harford, at Ciciter, at Newmarket.

The 2 day at Kingstone, at Blechingly. The 6 at Newport November.  
Pond, at Stanly. The 11 at Douer. The 13 at S. Edmondsbury.  
The 20 at Hyth. The 23 at Sandwich. The 30 at Rochester, at  
Paydenhead.

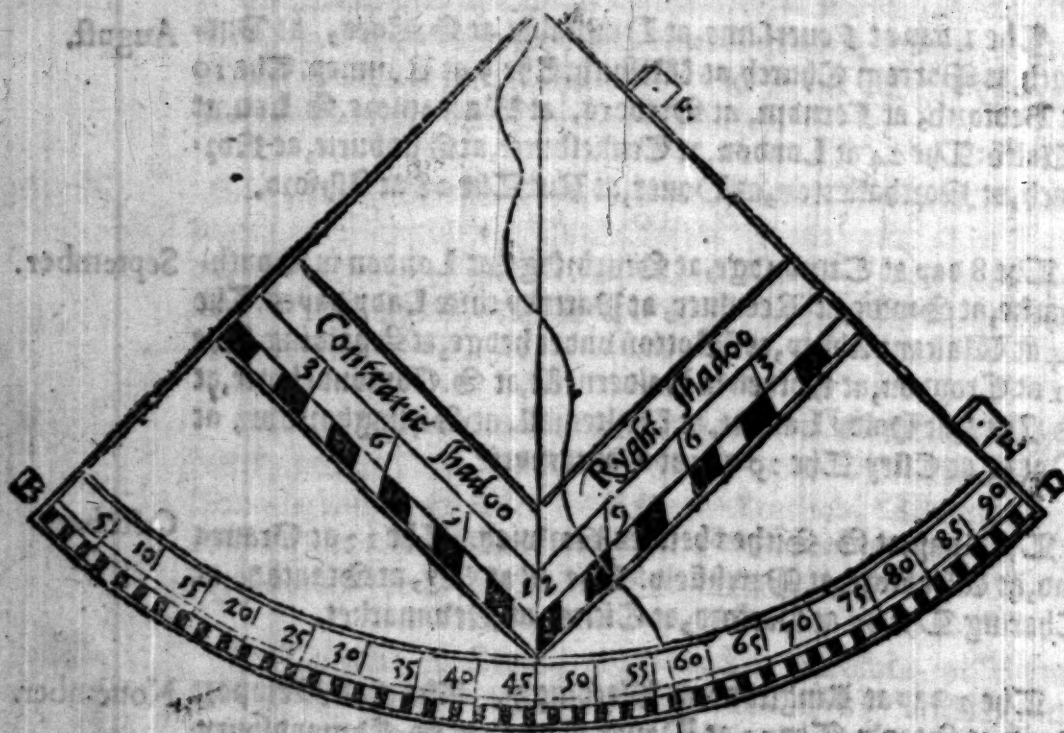
The 29 at Canterbury. The 5 at Pluckly. The 6 at Spalding. December  
The 7 at Sandhurst.

Because



**B**Ecause I vnderstand many are desirous how to get exactly the iust length of staffe and squire shadowe befoze treated of, vpon vneuell grounds, or otherwayes wheresoeuer it be, yea, without either squire or staffe: I haue calculated a Table following througely satisfying them, so that they get the height of the Sunne any way: or as I shall now instruct.

Behold this Instrument called a Quadrant the iust fourth part of a Circle, even such a Circle as I taught you befoze to make for the night Dial: containing the fourth part of his diuisions, that is 90. degrees, only two sights and a plum line added, to be placed at the beginning of this booke, as ye may there, and here see. I haue here also put the Scale to the Quadrant, which serueth wel for shadowes, and as well for heights. The vse of this Scale is declared in my booke called Teetonicon.



How by this Instrument to get the height of the Sunne at all times.

**L**et by handsomly your Quadrant, the Sunbeames persing the sights. The Plummet and Line then at libertie falling, noterh there the degrees of height at that present, with the which ye shall enter this table immediatly following, to get then, and in like manner at all other times, the iust shadow of the staffe or squire.

A table



*A Table generall of Shadowes, right and contrary, for  
euery grade of the Sunnes height: The thinge cau-  
sing Shadowe, supposed 12 partes.*

Height of the Sunne.		Staffe. Shadow.	Height of the Sunne.		Staffe. Shadow.	Height of the Sunne.		Staffe. Shadow.
G	P	M	G	P	M	G	P	M
0	2		0	2		0	2	
0	90	Sham.	30	60	20 7	60	30	6 5 6
1	89	687 3 4	31	59	19 5 8	61	29	6 3 9
2	88	343 4 3	32	58	19 1 2	62	28	6 2 3
3	87	228 5 9	33	57	18 2 9	63	27	6 7
4	86	171 3 7	34	56	17 4 7	64	26	5 5 1
5	85	137 10	35	55	17 9	65	25	5 3 6
6	84	114 10	36	54	16 3 0	66	24	5 2 1
7	83	97 4 9	37	53	15 5 2	67	23	5 6
8	82	85 2 8	38	52	15 2 1	68	22	4 5 1
9	81	75 4 6	39	51	14 4 9	69	21	4 3 6
10	80	68 3	40	50	14 1 8	70	20	4 2 2
11	79	61 4 4	41	49	13 4 8	71	19	4 5
12	78	56 2 7	42	48	13 2 0	72	18	3 5 4
13	77	51 5 9	43	47	12 5 2	73	17	3 4 0
14	76	48 8	44	46	12 2 6	74	16	3 2 6
15	75	44 4 7	45	45	12 0	75	15	3 13
16	74	41 5 3	46	44	11 3 5	76	14	3 0
17	73	39 1 5	47	43	11 1 1	77	13	2 4 6
18	72	36 5 4	48	42	10 4 8	78	12	2 3 2
19	71	34 5 1	49	41	10 2 6	79	11	2 2 0
20	70	32 5 8	50	40	10 4	80	10	2 7
21	69	31 1 6	51	39	9 4 3	81	9	1 5 4
22	68	29 4 2	52	38	9 2 2	82	8	1 4 1
23	67	28 1 6	53	37	9 3	83	7	1 2 9
24	66	26 5 7	54	36	8 4 3	84	6	1 1 6
25	65	25 4 4	55	35	8 2 4	85	5	1 3
26	64	24 3 7	56	34	8 6	86	4	0 5 0
27	63	23 3 3	57	33	7 4 8	87	3	0 3 8
28	62	22 3 4	58	32	7 3 0	88	2	0 2 5
29	61	21 4 0	59	31	7 1 3	89	1	0 1 2
30	60	20 4 7	60	30	6 5 6	90	0	0 0

Height of the Sunne     Squire Shadow     Height of the Sunne     Squire Shadow     Height of the Sunne     Squire Shadow

The vse of this Table, and first for  
Staffe shadow.

Ensample.



Suppose the height of the Sunne; taken by the Quadrant, thirtie foure degrees: Now I require the exact length of Staffe and Squire shadowe. For right shadow, first seeke out the degrees in the left part of the Table, and vnder this title the height of the Sunne: if they be not in that left rowe downwardes, resort to the next rowe and like title, untill ye find the degrees: then in right order toward the right hand, in the next Columnne vnder the title of Staffe shadow, are 17 parts, and 47 minuts, your desire.

For Squire shadow, titled contrarie  
Shadow.

Seeke your degrees in the right part vpwarde, at this tytyle Height of the Sunne, in the bottome of this Table: then shall ye find on the right hand of 34 degrees, in the next columnne, eight parts and sixe minutes: that is the verie length of Squire shadow when the Sunne is 34 degrees in height.

Occasioned I cannot here omit an other Table faithfully supputated for the Sunnes altitude, by the which with quicke speede the houre is knowne. This Table conduceth manifolde wayes, yea, to the composition of diuers and many Instruments: as Quadrants, Nauicles, Cylindres, Rings, &c.

Beholde now it doth ensue, and also the  
brieue vse of it.

A Table

A Table of the Sunnes altitude, for euery hour: the Pole mounted, 51. degrees  
30. Minutes, exactly calculated.

Fe. 40

Hours before n. Hours after n.			12	11	10	9	8	7	6	5	4
				I	2	3	4	5	6	7	8
G	S	G	G M	G M	G M	G M	G M	G M	G M	G M	G M
30	59	0	62 0	59 43	53 45	45 42	36 42	27 23	18 11	9 28	1 31
25		5	61 54								
20		10	61 37	59 21	53 26	45 24	36 25	27 6	17 54	9 9	13 :
15		15	61 9								
10		20	60 30	58 17	52 28	44 32	35 35	26 16	17 3	8 16	0 16
5		25	61 41								
0	52	0	58 42	56 34	50 55	43 6	34 13	24 56	15 41	6 10	0 0
25		5	57 34								
20		10	57 17	54 15	48 48	41 12	32 22	23 6	13 50	4 55	0 0
15		15	4 52								
10		20	53 21	51 26	46 12	39 46	30 6	20 52	11 34	2 34	0
5		25	51 43								
0	47	9	0 0	46 11	43 11	35 53	27 2	18 1	8 59	0 0	
25		13	48 12								
20		10	46 50	44 37	39 51	32 53	24 32	15 27	6 8	0 0	
15		1	44 25								
10		20	42 28	40 51	35 18	29 34	21 24	12 25	3 6	0 :	
5		25	40 29								
0	42	0	31 37	36 58	32 37	26 7	18 8	9 16	0 0		
25		5	36 30								
20		10	34 32	31 4	28 55	22 32	14 51	6 7	0 0		
15		15	32 35								
10		20	30 40	29 15	25 18	19 14	11 33	3 22	0		
5		25	28 48								
0	37	0	27 0	25 40	21 51	15 50	8 34	6 0			
25		5	25 17								
20		10	23 39	22 22	18 42	13 1	5 45	0 0			
15		15	21 8								
10		20	20 43	19 29	15 55	10 23	3 17	0			
5		25	19 26								
0	27	0	18 18	17 6	13 38	7 3	1 15				
25		5	17 19								
20		10	15 30	14 48	11 55	6 35	0 0				
15		15	13 51								
10		20	12 14	12	10 52	5 25	0				

When the Sunne eareth the 22 grade of 59, he toucheth our  
4. in the morning. Entering the 22 of 26 he ryseth at 8 in the  
aft. in the first of May at 7. Note in all my tables, one  
following the Minutes, diuit 15. 10. 5. 4. 3. 2. 1. 0. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 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811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 841. 842. 843. 844. 845. 846. 847. 848. 849. 850. 851. 852. 853. 854. 855. 856. 857. 858. 859. 860. 861. 862. 863. 864. 865. 866. 867. 868. 869. 870. 871. 872. 873. 874. 875. 876. 877. 878. 879. 880. 881. 882. 883. 884. 885. 886. 887. 888. 889. 890. 891. 892. 893. 894. 895. 896. 897. 898. 899. 900. 901. 902. 903. 904. 905. 906. 907. 908. 909. 910. 911. 912. 913. 914. 915. 916. 917. 918. 919. 920. 921. 922. 923. 924. 925. 926. 927. 928. 929. 930. 931. 932. 933. 934. 935. 936. 937. 938. 939. 940. 941. 942. 943. 944. 945. 946. 947. 948. 949. 950. 951. 952. 953. 954. 955. 956. 957. 958. 959. 960. 961. 962. 963. 964. 965. 966. 967. 968. 969. 970. 971. 972. 973. 974. 975. 976. 977. 978. 979. 980. 981. 982. 983. 984. 985. 986. 987. 988. 989. 990. 991. 992. 993. 994. 995. 996. 997. 998. 999. 1000. 1001. 1002. 1003. 1004. 1005. 1006. 1007. 1008. 1009. 1010. 1011. 1012. 1013. 1014. 1015. 1016. 1017. 1018. 1019. 1020. 1021. 1022. 1023. 1024. 1025. 1026. 1027. 1028. 1029. 1030. 1031. 1032. 1033. 1034. 1035. 1036. 1037. 1038. 1039. 1040. 1041. 1042. 1043. 1044. 1045. 1046. 1047. 1048. 1049. 1050. 1051. 1052. 1053. 1054. 1055. 1056. 1057. 1058. 1059. 1060. 1061. 1062. 1063. 1064. 1065. 1066. 1067. 1068. 1069. 1070. 1071. 1072. 1073. 1074. 1075. 1076. 1077. 1078. 1079. 1080. 1081. 1082. 1083. 1084. 1085. 1086. 1087. 1088. 1089. 1090. 1091. 1092. 1093. 1094. 1095. 1096. 1097. 1098. 1099. 1100. 1101. 1102. 1103. 1104. 1105. 1106. 1107. 1108. 1109. 1110. 1111. 1112. 1113. 1114. 1115. 1116. 1117. 1118. 1119. 1120. 1121. 1122. 1123. 1124. 1125. 1126. 1127. 1128. 1129. 1130. 1131. 1132. 1133. 1134. 1135. 1136. 1137. 1138. 1139. 1140. 1141. 1142. 1143. 1144. 1145. 1146. 1147. 1148. 1149. 1150. 1151. 1152. 1153. 1154. 1155. 1156. 1157. 1158. 1159. 1160. 1161. 1162. 1163. 1164. 1165. 1166. 1167. 1168. 1169. 1170. 1171. 1172. 1173. 1174. 1175. 1176. 1177. 1178. 1179. 1180. 1181. 1182. 1183. 1184. 1185. 1186. 1187. 1188. 1189. 1190. 1191. 1192. 1193. 1194. 1195. 1196. 1197. 1198. 1199. 1200. 1201. 1202. 1203. 1204. 1205. 1206. 1207. 1208. 1209. 1210. 1211. 1212. 1213. 1214. 1215. 1216. 1217. 1218. 1219. 1220. 1221. 1222. 1223. 1224. 1225. 1226. 1227. 1228. 1229. 1230. 1231. 1232. 1233. 1234. 1235. 1236. 1237. 1238. 1239. 1240. 1241. 1242. 1243. 1244. 1245. 1246. 1247. 1248. 1249. 1250. 1251. 1252. 1253. 1254. 1255. 1256. 1257. 1258. 1259. 1260. 1261. 1262. 1263. 1264. 1265. 1266. 1267. 1268. 1269. 1270. 1271. 1272. 1273. 1274. 1275. 1276. 1277. 1278. 1279. 1280. 1281. 1282. 1283. 1284. 1285. 1286. 1287. 1288. 1289. 1290. 1291. 1292. 1293. 1294. 1295. 1296. 1297. 1298. 1299. 1300. 1301. 1302. 1303. 1304. 1305. 1306. 1307. 1308. 1309. 1310. 1311. 1312. 1313. 1314. 1315. 1316. 1317. 1318. 1319. 1320. 1321. 1322. 1323. 1324. 1325. 1326. 1327. 1328. 1329. 1330. 1331. 1332. 1333. 1334. 1335. 1336. 1337. 1338. 1339. 1340. 1341. 1342. 1343. 1344. 1345. 1346. 1347. 1348. 1349. 1350. 1351. 1352. 1353. 1354. 1355. 1356. 1357. 1358. 1359. 1360. 1361. 1362. 1363. 1364. 1365. 1366. 1367. 1368. 1369. 1370. 1371. 1372. 1373. 1374. 1375. 1376. 1377. 1378. 1379. 1380. 1381. 1382. 1383. 1384. 1385. 1386. 1387. 1388. 1389. 1390. 1391. 1392. 1393. 1394. 1395. 1396. 1397. 1398. 1399. 1400. 1401. 1402. 1403. 1404. 1405. 1406. 1407. 1408. 1409. 1410. 1411. 1412. 1413. 1414. 1415. 1416. 1417. 1418. 1419. 1420. 1421. 1422. 1423. 1424. 1425. 1426. 1427. 1428. 1429. 1430. 1431. 1432. 1433. 1434. 1435. 1436. 1437. 1438. 1439. 1440. 1441. 1442. 1443. 1444. 1445. 1446. 1447. 1448. 1449. 1450. 1451. 1452. 1453. 1454. 1455. 1456. 1457. 1458. 1459. 1460. 1461. 1462. 1463. 1464. 1465. 1466. 1467. 1468. 1469. 1470. 1471. 1472. 1473. 1474. 1475. 1476. 1477. 1478. 1479. 1480. 1481. 1482. 1483. 1484. 1485. 1486. 1487. 1488. 1489. 1490. 1491. 1492. 1493. 1494. 1495. 1496. 1497. 1498. 1499. 1500. 1501. 1502. 1503. 1504. 1505. 1506. 1507. 1508. 1509. 1510. 1511. 1512. 1513. 1514. 1515. 1516. 1517. 1518. 1519. 1520. 1521. 1522. 1523. 1524. 1525. 1526. 1527. 1528. 1529. 1530. 1531. 1532. 1533. 1534. 1535. 1536. 1537. 1538. 1539. 1540. 1541. 1542. 1543. 1544. 1545. 1546. 1547. 1548. 1549. 1550. 1551. 1552. 1553. 1554. 1555. 1556. 1557. 1558. 1559. 1560. 1561. 1562. 1563. 1564. 1565. 1566. 1567. 1568. 1569. 1570. 1571. 1572. 1573. 1574. 1575. 1576. 1577. 1578. 1579. 1580. 1581. 1582. 1583. 1584. 1585. 1586. 1587. 1588. 1589. 1590. 1591. 1592. 1593. 1594. 1595. 1596. 1597. 1598. 1599. 1600. 1601. 1602. 1603. 1604. 1605. 1606. 1607. 1608. 1609. 1610. 1611. 1612. 1613. 1614. 1615. 1616. 1617. 1618. 1619. 1620. 1621. 1622. 1623. 1624. 1625. 1626. 1627. 1628. 1629. 1630. 1631. 1632. 1633. 1634. 1635. 1636. 1637. 1638. 1639. 1640. 1641. 1642. 1643. 1644. 1645. 1646. 1647. 1648. 1649. 1650. 1651. 1652. 1653. 1654. 1655. 1656. 1657. 1658. 1659. 1660. 1661. 1662. 1663. 1664. 1665. 1666. 1667. 1668. 1669. 1670. 1671. 1672. 1673. 1674. 1675. 1



# Briefe Collections.

## The briefe vse of this Table.

**S**uppose the height of the Sunne taken by the Quadrant, eight degrees and 13 minutes, the Sunne being in the beginning of Aquarie, or Sagittarie, I seeke, and find in this table and in the row which directly answereth  $\infty$  and  $\infty$  eight degrees and 13. Minutes: that is agreeable to 9. or 3. of the clock in the head of this table. Therefore I pronounce, that when the Sunne was 8. degrees & 13. Minutes in height, entring  $\infty$  or  $\infty$ , it was precise nine of the clock in the morning or thre at after noone.

Thus at all times ye may know the iust houre.

Ye may also conclude the height of the Sunne at all times, the place of the Sunne known, and the houre. Note, when the precise numbers either of height, or degree of the Sunne are not found in the table, then make proportion according to the difference, &c. Practise, better then many words, openeth this. Now to ende this matter: this folowing to him that hath tasted these knowledges, I wyte.

*¶ Dato loco Solis & eius altitudine, horam ipsam calculare.*

*De secundum inuenta solaris altitudinis, in sinum arcus semidiurni, & productum diuide per sinum altitudinis meridiana eiusdem Solis, & prouenientis inde partium numeri sumito arcum, quem tandem in horas uarias. Collectus horarum numerus quasitam indicabit horam: ab ortu quidem Solis, si altitudo fuerit antemeridiana, vel ab occasu, si eadem Solis altitudo acciderit post meridiem.*

**N**ow hauyng some occasion, I could here adioyne a briefe Supputation Sinicall, touching most workings Astronomical, but howe farre that passeth the capacity of the common sort of men, they that be trauayled knowe. For this cause I leaue to giue any precepts this way: desiring prouocation meete to haue to doe in the lyke: then God suffering, my penne shall not stay to

open

open readie chosen generall wayes, for pleasant Astronomical operation.

**H**ere shall nowe follow briesly collected certaine rules, performed befoze by tables: but now done by quicke supputation, to bee had in memorie: by that, auoyding carpage or burthen of booke.

A way to get the Golden number or Prime without a table.

**A** Doe vnto the yeare of our Lorde 1. then diuide that summe by 19, the remaine is the Prime or Golden number.

The Epact is thus euer found.

**M**ultiply the Prime by 11. diuide by 30, the remaine is your desire. These two numbers begin at March, their vse is chiefly to find out the change, quarters & full Moone, as ensaeth.

A rule for the Change, Full, and Quarters of the Moone.



At vnto the Epact at y moneths frō March, including the moneth of March: pull then that summe from 30: the remaine sheweth the day of the change.

Here note the full Moone is the 15 day after the change. Also if the remain be lesse then 15: subtract y lesse frō 15, the rest is y full Moone.

If the remaine passe 30, subtract it from 45, then the full doeth also appeare.

To conclude, if from the full Moone yee pull 15 dayes, yee haue the change going befoze. The change had, the quarters are knownen, by adding or pulling away seven dayes.

# Briefe Collections.

For the age of the Moone, worke  
thus for euer.

**A**Dde to the dayes of your Moneth the Epact, and also as many dayes more as are Moneths from March to your Moneth, including both Moneths. Now substract 30, if ye may, the age then remaineth.

Now shal be declared what Signes and degrees the Moone differeth from the Sunne, by the which is gathered at all times, the Signe and Grade wherein she is.



Multiply the age of the Moone by 4, divide by 10, the quotient sheweth the Signes that the Moone differeth from the Sunne. The remaine augmented by 3, bringeth degrees to be added. Ye must put these Signes and degrees to the place of the Sunne. The product, I meane the increase or ende of all these Signes and degrees in order counted from the Sunne, declare the place of the Moone in the Zodiacke.

The place of the Sunne in the Zodiacke is  
thus found.

**I**tem knowe that the 11 day of Januarie, the Sunne is entered into ♈. The 10 day of Februarie ♎. The 11 of March ♈. The 12 of April ♎. The 12 of May ♈. The 12 of June ♎. The 14 of Iulie ♈. The 14 of August ♎. The 14 of September ♈. The 14 of October ♎. The 13 of November ♈. The 12 of December ♎.  
This knowne, the place of the Sunne is well found, adding for every day past any entrey, 1 degree.

En.



Ensample.

**I** Require the place of the Sunne the 21. day of August. I finde that the Sunne is entered in by the 14 day of the moneth. I must for every day past any entry adde 1. degree. There are seauen daies past that entry, then I conclude the Sunne ready to haue place in the 8. degree of  $\Upsilon$  the 21. of August.

To know how long the Moone  
shineth.

**F**or her shining in the increase, multiply the age of the Moone by 4. In the wane augment the rest of the age which she lacketh of 30. by 4. and deuide by 5. The Quotient sheweth the houres: the remaines if there be any, multiplied by 12. bringeth minutes to be added.

How the moueable feasts are found  
readily.

**S**eeke the change of the Moone in February, for that yeare wee require these moueable Feasts. Note what day it falleth on, the next tuesday is Shrouetuesday. But if the chaunge be on Tuesday, the next Tuesday ensuing is it. The next Sunday is the first Sunday of Lent. Sixe Sondayes after is Easter day. Adde 35. dayes, or 5. weekes to Easter day, wee haue Rogation Sonday. To that adde 4. dayes, so ye haue Ascension day. Then haue ye 10. dayes to Whitsunday. Seauen dayes after is Trinity Sonday. And foure dayes after is Corpus Christi day.

Without Tables, at all times to know  
the Tydes.

**L**earne as is declared the age of the Moone, also remember the houre of the Full or Change, for your place or poynt which doth neuer varie: these knowen, work thus.

Ensam-

# Briefe Collections.

## Ensample.



When the Moone is 10 daies old, I desire to know  
at what of the clock it is full sea at London bridge.  
Multiplie 10 by foztie eight, so haue ye foure hun-  
dred eightie: diuide that by fytie, yee haue eight  
houres. To that adde thre, which is the houre of  
the full or change appoynted for that place. All  
then cometh into eleuen of the clocke high water at London  
Bridge. If any thing remaine they are Minutes of an  
houre. If the houres amount about twelue, cast  
the twelue away, the rest is  
your request.

## FINIS.



## To the Reader.



Having of late (gentle Reader) corrected and reformed sundry faults that by negligēce in printing haue crept into my Fathers *Generall Prognostication*: Among other things I haue found a description or Modill of the world, and situation of Spheres Cœlestiall and elementare according to the doctrine of *Ptolomie*, wherevnto all vniuersities (led therunto chiefly by the authoritie of *Aristotle*) sithe haue consented. But in this our age, one rare witte (seeing the continuall errors that from time to time more & more haue been discouered, besides the infinite absurdities in their Theoricks, which they haue been forced to admit that would not confesse any Mobilitie in the ball of the earth) hath by long studie, paynfull practise, and rare inuention deliuered a new Theorick or Modil of the world, shewing that the Earth resteth not in the Center of the whole world, but not only in the Center of this our mortall world or Globe of Elements, which enuironed and enclosed in the Moones Orbe, and together with the whole Globe of mortalitie is caryed yearly round about the Sunne, which like a king in the midst of all raygneth and giueth lawes of motion to the rest, sphaerically dispersing his glorious beames of light through all this sacred Cœlestiall Temple. And the Earth, it selfe to be one of the Planets, hauing his peculiar and strange courses turning euery 24 houres round vpon his owne Centre: whereby the Sunne and great Globe of fixed starres seeme to sway about and turne, albeit indeede they remayne fixed. So many wayes is the sense of mortall men abused. But reason and deepe discourse of wit hauing opened these things to *Copernicus*, and the same being with demonstrations Mathematicall, most apparantly by him to the world deliuered: I thought it conuenient together with the olde Theorick also to publish this, to the end such noble English mindes (as delight to reach aboue the baser sorte of men) might not be altogether defrauded of so noble a part of Philosophy. And to the end it might manifestly appeare, that *Copernicus* ment not as some haue

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fondly



## To the Reader.

middest of the thinne ayre onely with that proprietie which the wonderfull workman hath giuen at the Creation to the Center of this Globe, with his magnetickall force vehemently to draw & hale vnto it selfe all such other Elemental things as retayn the like nature. This ball euery 24 houres by natural vniforme, & wonderful flie and smooth motion rouleth round, making with his Period our naturall day, whereby it seemes to vs that the huge infinite im-moucable Globe should sway and turne about.

The Moones Orbe that emuironeth and containeth this darke starre, and the other mortall, chaungeable, corruptible Elements and Elementarie things, is also turned round euery 20. dayes, 31. Minutes, 50. secondes, 8. thirds, 9. fourths, and 20. fiftes: and this Period may most aptly be called the moneth. The rest of the Planets motions appeare by the Picture, and shall more largely bee hereafter spoken of.

Herein good Reader I haue waded farther then the vulgar sort, *Demonstratiue & Practicè*, and God sparing life I meane, though not as Iudge to decide, yet at the Mathematicall barre in this case to plead, in such sorte, as it shall manifestly appeare to the worlde whether it be possible vpon the Earths stabilitie to deliuer any true or probable Theorick, and then referre the pronouncing of sentence to the graue Senate of indifferent discrete Mathematicall Readers.

Farewel, and respect my trauaile as thou shalt see them tende to the aduancement of trueth, and discovering the monstrous loathsome shape of error.

A Perfit

# A PERFIT DESCRIPTION of the Cœlestiall Orbes, according

*to the most ancient doctrine of the Pithagorians:*

lately reuiued by Copernicus, and by Geometrical Demonstrations approved.



Although in this most excellent and difficult part of Philosophie in all times haue bene sundrie opinions touching the situation and moving of the bodies celestiall, yet in certaine principles, all Philosophers of any account of all ages haue agreed and consented. First that the Orbe of the fixed starres is of all other the most high, the farthest distant, & comprehendeth the other Spheres of wandring starres. And of these straying bodies called Planets, the olde Philosophers thought it a good ground in reason, that the highest to the Centre should swiftest moue, because the circle was least and thereby the sooner overpassed, and the farther distant, the more slowly. Therefore as the Moone being swiftest in course, is founde also by measure highest, so haue all agreed that the Orbe of  $\Gamma$  being in mouing the slowest of all the Planets, is also the highest:  $\Delta$  the next, & then  $\mathcal{Z}$ : but of  $\mathcal{Q}$  and  $\mathcal{P}$  there hath bene great controuersie, because they stray not enery way from the Sunne, as the rest doe. And therefore some haue placed them aboue the Sunne, as Plato in his Timæo: others beneath, as Ptolomie, and the greater part of them that followed him. Alpetragius maketh  $\mathcal{Q}$  aboue the Sunne, and  $\mathcal{P}$  beneath, and sundry reasons haue bene of all sides alledged in defence of their opinions. They that followe Plato (supposing that all starres should haue obscure and darke bodies shining with borrowed light like the Moone) haue alledged that if those Planettes were lower then the Sunne, then should they sometime obscure some part of the bodie of the Sunne, and also shine, not with a light circulare, but segmentarie, and that variablie as the Moone:

## To the Reader.

fondly excused him, to deliuer these grounds of the earths mobilitie onely as Mathematicall principles fayned, and not as Philosophicall truely auerred: I haue also from him deliuered both the Philosophicall reasons by *Aristotle* and others, produced to maintaine the Earths stabilitie, and also their solutions and insufficiencie, wherein I cannot a little commend the modestie of that graue Philosopher *Aristotle*, who seeing (no doubt) the sufficiencie of his owne reasons in seeking to confute the Earths motion, vseth these wordes. *De his explicatum est, ea, qua potuimus facultate*: howbeit his disciples haue not with like sobrietie mayntayned the same. Thus much for my owne part in this case I will onely say. There is no doubt, but of a true ground, truer effects may bee produced, then of principles that are false: and of true principles, falshood or absurdities cannot bee inferred.

If therefore the Earth be situate immouable in the Center of the world, why finde we not Theoricks vpon that ground to produce effects as true and certaine as those of *Copernicus*? Why cast we not away those *Circulus Equantes* and motions irregular? seeing our owne Philosopher *Aristotle* himselfe the light of our Vniuersities hath taught vs: *Simplicis corporis simplicem oportet esse motum*. But if contrarie, it be found impossible (the Earths stabilitie being graunted) but that we must necessarily fall into these absurdities, and cannot by any meane auoyd them: Why shal we so much dote in the apparance of our senses, which many wayes may bee abused, and not suffer our selues to bee directed by the Rule of Reason, which the great G O D hath given vs as a lamp to lighten the darknes of our vnderstanding, and the perfect guide to lead vs to the golden branch of Veritie amidst the Forrest of errors.

Behold a noble Question to be of the Philosophers and Mathematicians of our Vniuersities, argued not with childish Inventions, but with graue reasons Philosophicall, and irreprouable Demonstrations Mathematicall. And let vs not in matters of reason be led away with authoritie and opinions of men, but with the Stellified Poet let vs say:



## To the Reader.

*Non quid Aristoteles vel quinis dicat eorum:  
Dicta nihil moror, à vero cum fortè recedunt.  
Magni sæpè viri mendacia magna loquuntur.  
Nec quisquam est adeo sagax, quin sapius erret.*

*Ratio dux fida Sophorum.*

**T**He Globe of Elements enclosed in the Orbe of the Moone, I call the Globe of Mortalitie, because it is the peculiar Empire of death. For about the Moone they feare not his force: but as the Christian Poet sayeth,

*Omne quod est supra lunam, æternumq; bonumq;  
Esse scias: nec triste aliquid Cœlestia tangit.  
Quicquid verò infra luna connexa creauit  
Omniparens, natura malum est, mortisq; seueras  
Perpetitur leges & edaci absumitur ævo.*

*Againe.*

*Omne malum est infra lunam, nox atra, procellæ  
Terribiles, frigus, calor, importuna senectus,  
Pauperies male suada, labor, dolor, improbitas, Mors.  
Supra autem lunam, lucis sunt omnia plena,  
Nec non letitia & pacis, non tempus & error,  
Et MORS, & senium est illic, & inutile quicquam.  
Fœlix o nimum Fœlix, cui sedibus illis  
Tampulchris & tam iucundis tamq; beatis  
Vivere concessum est, supremi munere Regis.*

*And againe.*

*Singula nonnulli credunt quoque sidera posse  
Dici Orbes, Terramq; appellans sydus opacum,  
Cui minimus Diuum præsît, &c.*

In the midst of this Globe of Mortality hangeth this darke  
stanc or ball of the earth and water, balanced & sustayned in the

## To the Reader.

middest of the thinne ayre onely with that proprietic which the wonderfull workman hath giuen at the Creation to the Center of this Globe, with his magneticall force vehemently to draw & hale vnto it selfe all such other Elemental things as retayn the like nature. This ball euery 24 houres by natural vniforme, & wonderful flie and smooth motion rouleth round, making with his Period our naturall day, whereby it seemes to vs that the huge infinite im-mouecable Globe should sway and turne about.

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## The Addition.

which when they see by experience at one time to happen, they conclude with Plato. On the contrarie part, such as will maintaine them beneath, frame a likelihoode by reason of the large space betwene the Orbes of the ☉ and ☽. For the greatest distance of the ☽ is but 64 semidiameters of the earth; and to the highest of the Sunne are 1160, so that there remaineth betwene the ☽ and the ☉ 1095 semidiameters of the earth. And therefore that so huge a space should not remaine emptye, there they situate the Orbes of ♀ and ☿. And by the distaunce of their Absides whereby they search the thickeesse of their Orbes, they find that they of all the rest best answer that situation, so as the lowest of Mercuries Orbe may reach downe almost to the highest of the Moones, and the top of ♀ to the inferiour part of ☿ sphere, which with his Absis should reach almost vnto the Sunne. For betwene the Absides of ♀ by their Theoricks they supputate 177 semidiameters of the earth, and then the crassitude of ☿ Orbe, being 910 semidiameters both verie nigh supplie and fill the residue. They therefore will not confesse that these planets haue any obscuritie in their bodies like ♀ Moone, but that either with their owne proper light, or else being throughly pierced with solare beames, they shine and shewe circulare. And hauing a straying course of latitude, they seldome passe betwene the Sunne and vs, or if they should, their bodies being so small could scarcely hide the hundred part of the Sunne, and so small a spotte in so noble a light could hardly be discerned. And yet Auerrois in his Paraphrasis on Ptolomie affirmeth, that hee sawe a little spotte in the Sunne at such time as by Calculation he had forecast a corporall Coniunction. But howe weake this their reason is, it may soone appeare if we consider howe from the Earth to the lowest of the Moones Orbe there is 38 semidiameters of the Earth, or by the truer computation according to Copernicus 92. And yet in all that so huge a space we knowe nothing but the ayre or fire Orbe, if any such be. Again the Diameter of the Circle whereby ♀ should bee caried nigh 45 grades distant from the Sunne, must needs be 6 times greater at the least, then the distaunce of that circles lowest part from the Earth: then if that whole circle comprehended within the Orbe of ♀ should be turned about the earth, as needs it must, if we will not attribute to the

Earth

## The Addition. T

Earth any motion, wee may easily consider what rule in the Heavens so vaste and huge an Epicycle, containing a space so manie times greater then the earth, Aire, & Orbs of the Moone & also, will make: especially being turned round about the earth, Againe the reason of Ptoleomie, that the ☉ must needs be placed in the midst of those Planets that wander from him at libertie, and those that are as it were combined to him, is proved senslesse by the motion of the Moone, whom we see no lesse to stray from the Sun, then any of those other three superiour Planets. But if they will needs haue these two Planets Orbes within an Orbe of the Sunne, what reason can they giue why they should not depart from the Sunne at large, as the other Planets do, considering the increase of swiftnes in their motion must accompanie the inferiour situation, or els the whole order of Theoricks should bee disturbed? It is therefore euident, that either there must be some other Centre, whereunto the order of these Orbes should be referred, or else no reason in their order, nor cause apparant, why we should rather to H then to Z, or any of the rest attribute the higher or remoter Orbe. And therefore seemeth it worthie of consideration that Martianus Capella wrote in his Encyclopedia, and certaine other Latines held, affirming that ☿ and ♀ doe runne about the Sunne in their Spheres peculiar, and therefore could not stray farther from the ☉ then the capacitie of their Orbes would giue them leaue, because they encompassse not the Earth as the others do, but haue their Absides after another manner conuersed. What other thing would they hereby signifie, but that the Orbes of these Planets should enuiron the Sunne as their Centre. So may the Sphere of ♀ being not of halfe the amplitude of ☿ Orbe, bee well situate within the same. And if in like sort we situate the Orbes of H, Z, and J referring them as it were to the same Centre so, as their capacitie bee such as they containe and circulate also the Earth, happily wee shall not erre, as by euident Demonstrations in the restiue of Copernicus Revolutionis is demonstrate. For it is apparant that these Planets nigh the Sunne, are alwayes lesse, and farther distant, and opposite, and much greater in sight, and nigher to vs: whereby it cannot be, but the Centre of them is rather to the ☉, then to the earth to be referred as in the Orbes of ☿ & ♀

also



## The Addition.

also. But if all these to the Sunne as to a Centre in this manner be referred, then must there needs betwene the conuerse Dybe of  $\zeta$  and the concave of  $\delta$  an huge space bee left, wherein the earth and Elementarie frame, inclosed with the Lunary Dybe, of vltie must be situate. For, from the earth the Moone may not be farre remoued, being without controuersie of all other nighest in place and nature to it; especially considering betwene the same Dybes of  $\zeta$  and  $\delta$  there is roome sufficient. Therefore neede we not to be ashamed to confesse, this whole globe of Elements enclosed with  $\delta$  Moones sphere, together with the earth as the Centre of the same, to be by this great Dybe, together with the other Planets about the Sun turned, making by his reuolution our pere. And whatsoeuer seeme to vs to proceede by the mouing of the Sunne, the same to proceede in deede by the reuolution of the earth, the Sunne still remaining fixed and immouable in the midst. And the distance of the earth from the Sunne to bee such, as being compared with the other planets, maketh euident alterations, and diuersitie of aspects: but if it be referred to the Dybe of starres fixed, then hath it no proportion sensible, but as a point or a Centre to a circumference, which I hold farre more reasonable to be granted, then to fall into such an infinite multitude of absurde imaginations, as they were faine to admit that will needes wilfully maintaine the earthes stabilitie is the Centre of the world. But rather herein to direct our selues by that wisdome, we see in all Gods naturall works, where we may beholde one thing rather endued with many vertues and effects, then any superfluous or vnnecessarie part admitted. And all these things, although they seeme hard, strange, & incredible, yet to any reasonable man  $\delta$  hath his vnderstanding ripened with Mathematicall demonstration, Copernicus in his Reuolutions according to his promise hath made them more euident and cleare then the Sunne beames. These grounds therefore admitted, which no man reasonably can repugne, that the greater Dybe requireth the longer time to runne his Perieod: the orderly and most beautifull frame of the heauens doth ensue. The first and highest of all is the immouable sphere of fixed starres, containing it selfe & all the rest, and therefore fixed: as the place vniuersall of rest, whereunto the motions and positions of all inferiour spheres are to be compared.



## The Addition.

For albeit sundrie Astrologians finding alterations in the declination and longitude of Starres, haue thought that the same also should haue his motion peculiar: yet Copernicus by the motions of the Earth salueth all, and vterly cutteth off the ninth and tenth spheres, which contrarie to all sence the maintainers of the earths stabilitie haue beene compelled to imagine.

The first of the moueable Orbes is that of *H*, which being of all other next vnto the infinite Orbe immoueable, garnished with lights innumerable, is also in his course most slow, and once onely in thirtie yeares passeth his Period.

The second is *ZZ*, who in 12 yeares performeth his circuite.

Mars in two yeares runneth his circulare race.

Then followeth the great Orbe, wherein the Globe of mortallitie inclosed in the Moones Orbe as an Epicycle, and holding the earth as a Centre by his owne waight resting alway permanent in the middelt of the ayre, is caried round once in a yeare.

In the fift place is *Q*, making her revolution in 9 moneths.

In the sixt is *Q*, who passeth his circuite in 80 dayes.

In the middelt of all is the Sunne.

For in so Rarly a Temple as this, who would desire to set his lampe in any other better or moze convenient place then this, from whence vniiformly it might distribute light to all, for not vnfitly it is of some called the lampe or light of the worlde, of others the mind, of others the Ruler of the worlde.

Ad cuius numeros & dii moveantur, & Orbes

Accipiant leges, præscriptaque sædera seruent.

Trismegistus calleth him the visible God. Thus doth the Sun like a King sitting in his throne, gouerne his Courtes of inferi-

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our

## The Addition.

also, But if all these to the Sunne as to a Centre in this manner be referred, then must there needs betwene the conuexe Dybe of Q and the concave of S an huge space bee left, wherein the earth and Elementarie frame, inclosed with the Lunary Dybe, of dutie must be situate. For, from the earth the Moone may not be farre remoued, being without controuersie of all other nighest in place and nature to it: especially considering betwene the same Dybes of Q and S there is roome sufficient. Therefore neede we not to be ashamed to confesse, this whole globe of Elements enclosed with the Moones sphere, together with the earth as the Centre of the same, to be by this great Dybe, together with the other Planets about the Sun turned, making by his reuolution our pere. And whatsoeuer seeme to vs to proceede by the mouing of the Sunne, the same to proceede in deede by the reuolution of the earth, the Sunne still remaining fixed and immouable in the midst. And the distance of the earth from the Sunne to bee such, as being compared with the other planets, maketh euident alterations, and diuersitie of aspects: but if it be referred to the Dybe of starres fixed, then hath it no proportion sensible, but as a point or a Centre to a circumference, which I hold farre more reasonable to be granted, then to fall into such an infinite multitude of absurde imaginations, as they were faine to admit that will needes wilfully maintaine the earthes stabilitie is the Centre of the world. But rather herein to direct our selues by that wisdome, we see in all Gods naturall works, where we may beholde one thing rather endued with many vertues and effects, then any superfluous or vnnecessarie part admitted. And all these things, although they seeme hard, strange, & incredible, yet to any reasonable man that hath his vnderstanding ripened with Mathematicall demonstration, Copernicus in his Reuolutions according to his promise hath made them more euident and cleare then the Sunne beames. These grounds therefore admitted, which no man reasonably can repugne, that the greater Dybe requirerth the longer time to runne his Perion: the orderly and most beautifull frame of the heauens doth ensue. The first and highest of all is the immouable sphere of fixed starres, containing it selfe & all the rest, and therefore fixed: as the place vniuersall of rest, whereunto the motions and positions of all inferiour spheres are to be compared.

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For albeit sundrie Astrologians finding alterations in the declination and longitude of Stars, haue thought that the same also should haue his motion peculiar: yet Copernicus by the motions of the Earth salueth all, and vterly cutteth off the ninth and tenth spheres, which contrarie to all sence the maintainers of the earths stabilitie haue beene compelled to imagine.

The first of the moueable Orbes is that of *H*, which being of all other next vnto the infinite Orbe immoueable, garnished with lights innumerable, is also in his course most slow, and once onely in thirtie yeares passeth his Period.

The second is *ZZ*, who in 12 yeares performeth his circuite.

Mars in two yeares runneth his circulare race.

Then followeth the great Orbe, wherein the Globe of mortallitie inclosed in the Moons Orbe as an Epicycle, and holding the earth as a Centre by his owne waight resting alway permanent in the middest of the ayre, is caried round once in a yeare.

In the fift place is *Q*, making her revolution in 9 moneths.

In the sixt is *Q*, who passeth his circuit in 80 dayes.

In the middest of all is the Sunne.

For in so Rarly a Temple as this, who would desire to set his lampe in any other better or moze convenient place then this, from whence vniiformly it might distribute light to all, for not vnfitly it is of some called the lampe or light of the worlde, of others the mind, of others the Ruler of the worlde.

Ad cuius numeros & diu moueantur, & Orbes

Accipiant leges, p[er] scripta que fœdera seruent.

Trismegistus calleth him the visible God. Thus doth the Sun like a King sitting in his throne, gouerne his Courtes of inferi.



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our powers: neither is the Earth defrauded of the service of the Moone: but Aristotle sayth, of all other the Moone with the Earth hath highest alliance, so here are they matched accordingly.

In this fourme or frame may wee beholde such a wonderfull Symmetry of motions and situations, as in no other can bee proposed. The times whereby we the inhabitants of the Earth are directed, are constituted by the revolutions of the Earth: the circulation of her Centre causeth the yeare, the conuersion of her circumference maketh the naturall day, and the revolution of the  $\Delta$  produceth the moneth. By the onely view of this Theoricke, the cause and reason is apparant, why in  $\Upsilon$  the progressions and Retrogradations are greater then in  $\eta$ , and lesse then in  $\delta$ , why also in  $\zeta$  they are more then in  $\psi$ : and why such chaunges from direct to retrograde Stationarie, &c. happeneth, notwithstanding more risely in  $\eta$  then in  $\Upsilon$ , and yet more rarely in  $\delta$ : why in  $\zeta$  not so commonly as in  $\psi$ . Also why  $\gamma$  and  $\delta$  are nigher the Earth in their Acronicall, then in their Cosmicall or Heliacall rysing: especially  $\delta$ , who rising at the Sunne set, sheweth in his ruddie fierie colour equall in quantitie with Iupiter, and contrariwise setting little after the Sunne, is scarcely to be discerned from a starre of the second light. All which alterations apparantly follow vpon the Earthes motion. And that none of these do happen in the fixed Starres, it plainly argueth this huge distance and immeasurable altitude, in respect whereof this great Dybe, wherein the Earth is caried, is but a poynt, and utterly without sensible proportion, being compared to that Heauen. For as it is in perspective demonstrate: Euery quantitie hath a certaine proportionable distance whereunto it may be discerned, and beyond the same it may not be seene. This distance therefore of the immouable Heauen is so exceeding great, that the whole Orbis magnus vanissheth away, if it be conferred to that Heauen.

Herein can wee neuer sufficiently admire this wonderfull and incomprehensible huge frame of Gods worke proposed to our senses, seeing first this ball of the Earth wherein we moue, to the common sort seemeth great, and that in respect of the Moones Dybe is verie small, but compared with Orbis magnus where-

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in it is carried, it scarcely retaineth any sensible proportion: so manifestly is that Dybe of annuall motion greater then this little darke starre wherein we live. But that Orbis magnus, being (as is before declared) but as a point in respect of the immensitie of the immoveable Heauen, we may easily consider what little portion of Gods frame our Elementare corruptible world is, but neuer sufficiently be able to admire the immensitie of the rest: especially of that fixed Dybe garnished with lights innumerable, and reaching vp in Spherical Altitude without ende. Of which lights Celestiall it is to be thought, that we onely beholde such as are in the inferiour parts of the same Dybe: and as they are higher, so seeme they of lesse and lesser quantitie, euen till our sight, bring not able farther to reach or conceiue the greatest part of the rest, by reason of their wonderfull distance inuisible vnto vs. And this may well be thought of vs to bee the glorious Court of the great God, whose vnsearchable workes inuisible we may partly by these his visible, coniecture: to whose infinite power and Maiestie, such an infinite place surmounting all other both in quantitie and qualitie onely is conuenient. But because the worlde hath so long a time bene carryed with an opinion of the Earthes stabilitie, as the contrarie cannot but be nowe very imperwasable, I haue thought good out of Copernicus also, to giue a taste of Reasons philosophicall alledged for the Earthes stabilitie, and their solutions: that such as are not able with Geometrical eyes to beholde the secreete perfection of Copernicus Theoricke, may yet by these familiar and naturall reasons be induced to search farther, and not rashly to condemne for phantasticall, so auncient doctrine reuiued, and by Copernicus so demonstratiuely approued.

What reasons moued Aristotle, and others that followed him, to thinke the Earth to rest immoveable as a Centre to the whole world.

**T**he moste effectuall reasons that they produce to prooue the Earthes stabilitie in the middle or lowest part of the worlde,

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is that of Gravitie and Levitie. For of all other the Element of the earth (say they) is most heauie, and all ponderous things are carped vnto it, stryuing (as it were) to sway even downe to the inmost part thereof. For the earth being round, into the which all waightie things on euerie syde fall, making right angles on the superficies, passe to the Centre, seeing euerie right line that falleth perpendicularly vppon the Horizon in that place where it toucheth the Earth, must needs passe by the Centre. And those things that are caried towarde that Medium, it is likely that there also they woulde rest. So much therefore the rather shall the Earth rest in the middle, and (receyuing all things into it selfe that fall) by his owne waight shall bee most immouable. Againe they seeke to proue it by reason of motion and his nature, for of one and the same simple bodie, the motion must also bee simple, sayth Aristotle. Of simple motions there are two kindes, Right and Circular: Right are either vp or downe: so that euerie simple motion is either downward toward the Centre, or vppward from the Centre, or Circular about the Centre. Now vnto the Earth and Water in respect of their waight, the motion downward is conuenient to seeke the Centre: to Ayre and Fire in regard of their lightnesse, vppward and from the Centre. So is it mete to these Elements to attribute the right or straight motion, and to the Heauens onely it is proper circularly about this meane or Centre to be turned round. Thus much Aristotle. If therefore (sayth Ptoleomie of Alexandria) the Earth should turne but onely by that dayly motion, things quite contrarie to these shoulde happen. For his motion should bee most swift and violent, that in 24. houres shoulde let passe the whole circuit of the Earth: and those things which by sodain turning are stirred, are altogether vnmet to collect, but rather to disperse things vnited, vnlesse they should by some firme fastning be kept together. And long ere this, the Earth being dissolued in peeces, shoulde haue bin scattered through the Heauens, which were a mockerie to thinke of: and much more, beastes, and all other waights that are loose could not remaine vnshaken. And also things falling should not light on the places perpendiculare vnder them, neither should they fall directly thereto, the same being violently in the meane while caried away. Clouds also and  
other



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Other things hanging in the Ayre should alwaies seeme to vs to be carped toward the West.

The Solution of these Reasons, with  
their insufficiencie.

**T**Hese are the causes, and such other, wherewith they approue the Earth to rest in the middle of the world, and that out of all question. But hee that will maintaine the Earthes mobilitie, may say that this motion is not violent but naturall. And these things which are naturally mooued haue effectes contrarie to such as are violently carped. For such motions wherein force and violence is vsed, must needes bee dissolued, and cannot be of long continuance: but those which by nature are caused, remaine still in their perfitte estate, and are conserued and kept in their most excellent constitution. Without cause therefore did Ptolomie feare least the Earth, and all earthly things should be tozned in peeces by this Revolution of the Earth, caused by the working of Nature, whose operations are farre different from those of Arte, or such as humaine intelligence may reach vnto. But why should hee not much more thinke and misdoubt the same of the worlde, whose motion must of necessitie be so much more swift and vehement then this of the Earth, as the Heauen is greater then the Earth. Is therefore the Heauen made so huge in quantitie that it might with unspeakable vehemencie of motion be leuered from the Centre, least happily resting it should fall, as some Philosophers haue affirmed? Surely if this reason should take place, the magnitude of the Heauen should infinitely extend. For the more this motion should be violently bee carped higher, the greater should the swiftnesse be, by reason of the increasing of the circumference, which must of necessitie in 24. houres be past ouer, and in like manner by increase of the motion, the Magnitude must also necessarily bee augmented: thus should the swiftnesse increase Magnitude, and the Magnitude the swiftnesse infinitely. But according to that ground of nature, whatsoever is infinite can neuer be passed ouer. The Heauen therefore of necessitie must stand & rest fixed. But say they, without the heauen there is no body, no place,

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no emptinesse, no not any thing at all whether heauen shoulde or could farther extend. But this surely is very strange, that nothing should haue such efficient power to reſtraine ſome thing, the ſame hauing a very eſſence and being. Yet if we would thus confeſſe that the Heauen were in deed infinite vpwarde, and onely finite downewarde in reſpect of his ſphericall concauitie: much moze perhaps might that ſaying be verified, that without the Heauen is nothing, ſeing every thing in reſpect of the infiniteneſſe thereof had place ſufficient within the ſame. But then muſt it of neceſſitie remaine immouable. For the chiefeſt reaſon that hath moued ſome to thinke the Heauen limited, was Motion, which they thought without controuerſie to bee in deed in it. But whether the worlde haue his boundes, or bee in deed infinite and without boundes, let vs leaue that to bee diſcuſſed of Philoſophers: ſure we are that the Earth is not infinite, but hath a circumference limited. Seeing therefore all Philoſophers conſent the limited bodyes may haue motion, and infinite cannot haue any: why do wee yet ſtagger to confeſſe motion in the Earth, being moſt agreeable to his forme and nature, whole boundes alſo and circumference we know, rather then to imagine that the whole worlde ſhould ſway and turne, whole ende wee knowe not, ne poſſibly can of any mortall man be knowne? And therefore the true motion in deed to be in the Earth, and the apparance onely in the Heauen: and that theſe apparances are not otherwiſe then if the Virgilian Aeneas ſhould ſay:

*Pronebimur portu, terra q, vrbeſq, recedunt.*

For a Ship carped in a ſmooth Sea with ſuch tranquillitie doth paſſe away, that all things on the ſhores and the Seas, to the ſaylers ſeeme to moue, and themſelues onely quietly to reſt with all ſuch things as are aboord with them: ſo ſurely may it be in the Earth, whole motion being naturall and not forcible, of all other is moſt vniforme and vnperceyueable, whereby to vs that ſayle therein, the whole worlde may ſeeme to roule about. But what ſhall we then ſay of Cloudes and other things hanging or reſting in

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in the ayre, or tending upward, but that not onely the Earth & sea making one globe, but also no small part of the aire is likewise circularly carried, and in like sort all such things as are deriued from them, or haue any maner of alliance with them: Either for that the lower Region of the aire being mixt with earthly and watry vapours, follow the same nature of the Earth: Either that it bee gayned and gotten from the Earth by reason of Vicinitie, or Contiguitie. Which if any man maruaile at, let him consider howe the olde Philosophers did peecke the same reason for the Revolution of the highest Region of the ayre, wherein wee may sometime beholde Comets carryed circularly no otherwise then the bodyes Celestiall seeme to bee, and yet hath that Region of the Ayre lesse conuenience with the Dykes Celestiall then this lowe part with the Earth. But we asseyme that part of the aire in respect of this great distanse to be destitute of this motiō terrestrial, and that this part of the ayre that is next to the Earth doth appeare most still and quiet, by reason of his vniforme naturall accompanying of the Earth, and likewise things that hang therein, vntil by windes or other violent accident they bee tossed to and fro. For the winde in the ayre is nothing else but as waues in the Sea. And of things ascending and descending in respect of the worlde we must confesse them to haue a mixt motion of right and circular, albeit it seeme to vs right and straight, not otherwise then if in a ship vnder sayle a man should softly let a plummet downe from the top along by the mast euen to the decke: this plummet passing alwayes by a straight mast, seemeth also to fall in a right line, but being by discourse of reason weyed, his motion is found mixt of right and circular. For such things as naturally fall downward, being of earthly nature, there is no doubt but as partes they retaine the nature of the whole. No otherwise is it to these things that by fierie force are caried upward. For the earthly fire is chiefly nourished with earthly matter: and flame is defined to be naught else but burning fume or smoke, & that the proprietie of fire is to extend the subiect whereinto it entereth, the which it doth with so great violence, as by no meanes or engines it can bee constrained, but that with breach of bandes it will perforce vs nature. This motion extensive is from the Centre to the circumference: so that if any earthly part be fiered,



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ferred, it is carryed violently upwarde. Therefore whereas they say, that of simple bodies the motion is altogether simple, of the circular it is chiefly verified so long as the simple bodie remaineth in his naturall place, and perfect unitie of composition: for in the same place there can be no other motion but circular, which remainning wholly in it selfe, is most like to rest an immobilitie. But right or straight motion onely happen to those things that stray and wander, or by any meanes are thrust out of their naturall place. But nothing can be more repugnaunt to the forme and ordinance of the worlde, then that things naturally shoulde be out of their naturall place. This kind of motion therefore that is by right line, is onely accident to those things that are not in their right state or perfection naturall, while partes are disioyned from their whole bodie, and couet to returne to the unitie thereof againe. Neither doe these things which are carryed upwarde or downward besides this circular moving make any simple vniforme, or equall motion, for which their leuitie or ponderositie of their bodie, they can not be tempered, but alwayes as they fall (beginning slowly) they increase theyr motion, and the further the more swiftly, whereas contrariwise this our earthly fire (for other wee can not see) we may beholde as it is carried upwarde to vanish and decay, as it were confessing the cause of violence to procede onely from his matter terrestriall. The Circular motion alway continueth vniforme and equall, by reason of his cause which is indeficient and alway continuing. But the other hasteneth to ende and to attaine that place where they leane longer to be heaue or light, and hauing attained that place, their motion ceaseth. Seeing therefore this circular motion is proper to the whole, as straight is onely vnto partes, we may say that circular dooth rest with straight as animal cum xgro. And whereas Aristotle hath distributed simplicem motum into these three kindes, A medio ad medium, and circa medium, it must be onely in reason, and imagination, as we likewise seuer in consideration Geometrical, a point, a line, and a superficies, whereas in deede neither can stande without other, nor any of them without a bodie.

Hereto wee may adioyne, that the condition of immobilitie is  
—more

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more noble and diuine then that of change, alteration, or instabilitie, and therefore more agreeable to Heauen then to this Earth, where all things are subject to continuall mutabilitie. And seeing by euident prooffe of Geometricall mensuration, we finde that the Planets are sometimes nigher to vs, and sometimes more remote, and that therefore euen the maintainers of the Earthes stabilitie are enforced to confesse, that the Earth is not their Dybes Centre, this motion circa Medium must in more generall sort be taken, and that it may be vnderstand that euerie Dybe hath his peculiar Medium and Centre, in regard whereof this simple and vniforme motion is to be considered. Seeing therefore that these Dybs haue severall Centres, it may be doubted whether the Centre of this earthly grauitie be also the Centre of the world. For grauitie is nothing else but a certaine procliuitie or naturall coueting of parts to bee coupled with the whole, which by diuine prouidence of the Creator of all, is giuen and impressed into the partes, that they should restore themselves into their vnitie and integritie, concurring in sphericall forme. Which kinde of proprietie or affection, it is likely also that the Moone and other glorious bodies want not, to knit and combine their parts together, and to maintaine them in their round shape, which bodies notwithstanding are by sundrie motions, sundry wayes conueyed. Thus as it is apparant by these naturall reasons, that the mobilitie of the Earth is more probable and likely then the stabilitie: so if it be Mathematically considered, and Geometricall mensurations every part of euery Theoricke examined: the discrete student shall finde, that Copernicus not without great reason did propone this ground of the Earthes mobilitie.

A short

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A short discourse touching the variation  
of the Compasse.



Erroneous (no doubt) is that naturall propriety of the Magnes, whereby the needle touched immediately turneth to some one certaine point of the heauens, & after sundry motions hither and thither, findeth rest onely in one place and poynt. And albeit this poynt in severall Horizons be different, yet in any one Horizon it remaineth alway permanent, and therefore it plainly appeareth that the same proceedeth of some constant permanent cause naturall, and not of any mutable vncertaine cause accidentall. But what this cause should be, no man hitherto hath truly discovered. To omit apparant absurd opinions, the most probable of those that haue bene giuen and generally best allowed, is the point Attractive, which should be of such vertue as to draw the needle touched alway toward the same poynt: but whether this point should be in the heauens or earth, is another controuersie. Such as will haue it in the earth, asseyne it to be a huge mountaine or rocke of Magnes Stone, distant from the Pole certaine grades, which drawing the needle to it selfe, alwayes causeth it to make an angle of variation from the Pole of the world, (sane onely vnder the Meridian that passeth by the same Attractive poynt. But the errour of this opinion will soone be found of them that shall vpon this supposition, and two different angles of variation, search out the place of that point Attractive (the same being in that Interfection of the two Circles of position by the variations determined) and then conferre that with some thirde angle of variation: whereby it shall plainly appeare that in the Earth no such one Attractive poynt can be imagined, as shall by Circle of opposition produce such variations as in Navigation haue bene discovered. And to place this poynt Attractive in any of the Heauens, it would appeare more absurd. For whether the Heauens mooue, and the Earth rest immouable, or the Earth mooue, and the great Orbe of Starres be permanent, as of necessitie the one or the other must bee true (considering a motion is apparant) it must necessarily follow, that his alteration should be in continuall alteration every houre and moment of the day: but by experience we find the contrary, and therefore may necessarily



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cessarily be inferred, no such Attractive point in that Heauen. So that hauing found by these trials this imagination of a point Attractive, and such instruments as haue bene vpon that ground deuised, but meere vanities, I haue somewhat farther sought. And among sundry imaginations that I haue Mathematically handled, I thinke it is not amisse to propone one to be considered, weighed and examined by exquisite triall of Geometrical demonstration, and Arithmetical calculation: for it is no question for grosse Mariners to meddle with, no more then the finding of the Longitude. And therefore I cannot a little wonder at the blind boldnes of Sebastian Cabotto, and some others, that being ignorant both in Geometrical demonstration, and Arithmetical Symicall calculations, haue nathelasse tane vpon them in these most difficile questions to promise resolution, being no more able or likely to performe it, then an Oxe to flie betweene two Mountaine tops. Those sciences being the onely wings to eleuate our grosse senses to matter so high and mysticall, let such content themselves with the prayse of painfull, hard, farre trauelled mariners, and for their new discoveries let them learne Apelles lesson: Ne sutor vltra crepidam. Of these two Problemes thus much I promise for the inuention of the Longitude, I will (God sparing life) deliuer meanes as exact, certaine, and feazeible, at all times of the yeare in what place soeuer, as by Eclipses. And for the other if I deliuer not the like, at the least so farre I will waide therein, that such blind boldnesse knowing somewhat more their owne imperfection, shall in such mysteries vse more modestie.

An Hypothesis or supposed cause of the variation of the  
Compassse, to be Mathematically weighed.



As the Axis of the Earth, notwithstanding all other motions, remayneth as it were immouable, and yet in respect of the sphericall forme of the Earth in euerie seuerall Horizon maketh a seuerall line Meridionall, by reason of the section made in the superficies of the Horizons by Meridians, hauing all that Axis as their common diametre, so may it also come to passe of the line of the needle and his varia-

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tion, the needle being alway permanent in one playne superficies according to the severall section of the plaine wherein it resteth, and the Horizon there may continually bee made, in every plaine new variations. More playnly to open this imagination thus I say, that as in a payre of ballance of equall weight there is a certaine motion to and fro before they find their true place of rest (the same being only in the level of y<sup>e</sup> Horizon) which cometh to passe, as Copernicus affirmeth, by the Attractive Centre of the earth, who drawing unto him either waight w<sup>th</sup> like force, finding the subjects like also, compelleth them to rest in the superficies like distant from that Attractive Centre: So in the needle being a body endued with two severall proprieties the one of Gravitie and Levity, which being equally peized, forceth him to abide in the Horizon: the other being Magneticall and received by the touch, which causeth him to rest alway in that one Meridian, to the Magnes appropriate, it thereby cometh to passe, that after sundry balancing this way and that way, it onely setteth in the common section of this peculiar Meridian and the Horizon. So that even as in Dyals the line of the stile only accordeth and concurrerth with the Meridian line, in such as are voyd of declination, but in all such plains as are declinatorie, the line of the stile varieth from the Meridian line, and the same angle of variation also altererth aswel in respect of inclination as declination, so I suppose this variation of the Compass to be nothing else but the angle comprehended betwene the Meridian line, and the common section of the magneticall Meridian and the Horizon in the Horizontall plaine, and this angle to be alwayes exactly equall to the angle contained of the Meridian line, and line of the stile, the Longitude of the place proponed accounted from the magneticall Meridian, being equall to the declination of the Dyals Playne superficies, making computation from South to East circularly, and the Latitude of the place equall to the complement of the inclination of the same superficies Horologial. Of the verity of this supposition I coulde easily determine, if there were any trust to the observation of Mariners: but having found by experience their grosse usage and homely instruments, where halfe a point commonly breakes no square, and also they repugnant tales.



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sales that haue traauayled the selfe same voyages, I cannot yet resolve.

**V**Pon due examination of this Hypothesis there may happily fall out a straunge Paradox, not thought of hitherto, that these vulgare marine Chartes delineate with Parallele meridians, and right lined Rumbie, being of themselves apparauntly false and erroneous, yet vsed without rectification of the compasse: may bring forth true effects, and so two errors concurring produce a veritie.

### Errours in the arte of Nauigation commonly practised.

**F**irst, all their Chartes are described with streight Meridian lines running equidistant or Parallele, which error is most manifest to any that haue tasted but the first Principles of Cosmographie, considering they are all great circles, and concur in the Poles.

**S**Econdly, they suppose that running vpon any of their poynes of their compasse, they should passe in the circumference of a great circle, and therefore in the platue Charte describe those winds with streight lines: but therein are they greatly abused, for the Shippe steering the North and the South, onely maketh her course in a great circle: East or West she describeth a Parallele, and being stirred on any other meane poyn (the compasse being truly rectified) she delineateth in her course a curue or Helicall line, neither streight nor circular, but mixt of both, and therefore to set forth these winds in the Chartes with streight lines is most erroneous.

**T**Hirdly their rule to know Latitude by the Pole starre, adding or subtracting from his Altitude according to the situation of the Grades, is also false, and that worst is, cannot be amended, but



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be it neuer so well rectified to one climate, yet is it false in all other.

**F**urtherly, their taking of the Sunne with their Balistile (as they terme it) is most false: and whereas some finding the error thereof, haue gone about to remedie the same by cutting off a part at the ende, thinking thereby it might approach to the Centre of the eye, they increase thereby the error, and make it more false. For visus non fit a puncto, as they suppose. And this error is much lyke the other of the Pole Starre and situation of the Guardes: for be it neuer so well corrected by section to any one Altitude, then shall it be false for all other, as to any skillfull in Perspective it is easily demonstrate.

This error I haue already reformed, Demonstratiue, & Practicè in my booke lately published, entituled *Ala seu Scala Mathematica*.

Also the rules they haue to knowe how many leagues they shall runne vpon euery poynnt to raise one degree in Latitude, are also meere false. For they search that Arcke Itinerall as though it were the Hypothenusa to a right angled triangle, whose sydes are circles of contrarie nature, the one a Parallele, the other a great Circle, and therefore without all sence seeke they by proportion of right lines to deliuer their quantitie.

But besides these errors, they haue one great imperfection yet in their arte, and hitherto by no man supplied, and that is the want of exact Rules to know the Longitude of Arckes Itinerall, East and West, without the which they can neither truly giue the place or situation of any coast, Harbourn, Rode or Towne, ne yet in sayling, discern howe the place they sayle vnto beareth from them, or how farre it is distaunt, whereby they are enforced long before they come at any Coast, all night to strike sayle, no other wayes then if they were vpon it, thereby loosing the benefite of prosperous winds, in such sort sometimes, that whereas keeping a true course they might haue bene quietly at Roade, they are by

## The Addition.

by contrary and aduerse tempests carryed farre off, and so not without great charge to the owner, paine to the companie, and perill to the vessell, are enforced to wast their time, which groweth of their ignorance, that they neither haue true Rules to direct themselves the nighest course, ne yet treading their beaten pathes can assuredly decide of their certaine place. For reformation of these errours and imperfections, new Chartes, new Instruments, and new Rules must be prescribed. Wherein I haue prepared in

a peculiar volume for that purpose to entreate, wi-

thing in the meane time that such as are not

able to refoyme these fautes, will ab-

staine to teach our Coun-

try-men more er-

rors.

FINIS.

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